```
SA.
& CIE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (SOLV ) SOLVAY
(SOLV ) SOLVAY
                                                                                                                                                                                                                                                                                                                                                                                                                            Xylanase gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19-JUL-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-MAY-1995;
26-JUL-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   08-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AU9525086-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                     baking; ss.
                                                  118.4
118.4
117.8
115.2
115.2
115.2
111.8
                                                                                                                                                      103
100.8
100.8
100.4
100.4
98.8
                                                                                                                            105.8
105.8
104.4
                                                                                                                                                                                                                                                           89.6
88.2
87.2
87.2
         204.8
154.4
151.2
119.4
                                                                                                                                                                                                                         93.4
                                                                                                                                                                                                                                                                                                                                                                                          AAT16101;
                                                                                                                                                                                                                                                                                                                                                                Xylanase gene. Ba
Xylanase precursor
Xylanase gene. Ba
Glycosyl hydrolase
DNA encoding a Bac
Thermostable alkal
Xylanase activity
Clostridium sterco
                                              October 20, 2003, 10:40:37 ; Search time 259 Seconds (without alignments) 6910.144 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                      US-09-909-207-1
663
1 CAAATCGTCACCGACAATTC......TAACTTTGGATAAAAACAAT 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                            2552756 seqs, 1349719017 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUMMARIES
                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAT16101
AAT16102
AAT16103
AAV13067
AAV30255
AAQ92878
AAV13074
                                - nucleic search, using sw model
                                                                                                                   IDENTITY NUC Gapop 10.0 , Gapoxt 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          П
                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        %
Query
Match Length D
                                                                                           Perfect score:
                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          663
663
634.2
634.2
634.2
634.2
527.8
                                OM nucleic
                                                                                                    Sequence:
                                                                                                                                            Searched:
                                                                                                                                                                                                                                          Database
                                                 Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Result
```

```
        9
        255.2
        38.5
        1022
        16
        AAQ80923
        Nucleoride sequence

        10
        215.2
        30.9
        1244
        17
        AAT0812
        Nucleoride sequence

        11
        204.8
        30.9
        1244
        17
        AAT0812
        Nucleoride sequence

        11
        204.8
        30.9
        144
        17
        AAD02876
        Thermostable alkal

        12
        154.4
        18.0
        1375
        16
        AAD02876
        Thermostable alkal

        14
        119.4
        18.0
        1375
        17
        AAX00405
        Actinomadura Epc
        D

        15
        119.4
        18.0
        1375
        18
        AAT64930
        Actinomadura Epc
        DLM

        11
        119.4
        18.0
        1375
        18
        AAT64930
        Actinomadura Epc
        DLM

        11
        119.4
        18.0
        1375
        19
        AAV15099
        Actinomadura Epc
        DLM

        11
        119.4
        17.0
        273
        19
        AAV15099
        Actinomadura Epc
        DLM

        11
        110.4
        AAV15099<
```

ALIGNMENTS

```
밁
                                                   გ
                                                                                 밁
                                                                                                      á
                                                                                                                                       밁
                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        १
                                                                                                                                                                 ş
                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match . 100. Best Local Similarity 100. Matches 663; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 663 BP; 220 A; 131 C; 146 G; 166 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (AAR92053) was isolated from a gene library of Bacillus sp. 720/1 (LMG P-14798). Sequences were also obtd. (see AAT16102 and AAT16103) for the xylanase precursor and for the complete gene including 5' and 3' untranslated sequences. DNA coding for the mature enzyme may be incorporated into a vector and expressed from either its own promoter or from the Bacillus punilus PRL B12 promoter (AAQ73996), and used for prodn. of recombinant xylanase in transformed hosts, pref. Bacillus licheniformis or B. pumilus. The enzyme is useful in the paper-pulp, animal feed and baking industries.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacillus derived xylanase active over wide pH range - use treatment of paper pulp, animal feeds and in bakery goods
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    De Buyl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA sequence (AAT16101) coding for a thermostable mature xylanase
                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1996-117341/13
DB; AAR92053.
                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                        301
 661
                           601
                                                     601
                                                                                                           541
                                                                                                                                       481
                                                                                                                                                                   481
                                                                                                                                                                                               421
                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                     ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                              TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                          AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAAATTCAATGAAACACAAACACAC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
 AAT 663
                                                 ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTTGGATAAAAAC
                                                                                                                                                                    AACCACTTTAGAGCGTGGGAAAACTTAGGGGATGAATATGGGGGAAAATGTATGAAGTCGCG 540
                                                                                                                                                                                                                TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                      ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                    TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                    TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTTATATTTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAATTCAATGAAACACACAAACACAC 180
                             ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
                                                                                                                                                                                               TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                              TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Page 50-51; 94pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Detroz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₽,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lahaye
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 663; DB 17;
Pred. No. 1.3e-188;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۶
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ledoux P;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               663;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   °.
                                                                                   600
                                                                                                              600
                                                                                                                                         540
                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                              660
                                                       660
                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
δ
```

```
RESULT 2
AATI6102
ID AATI
ACC 
                                           밁
                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                     밁
                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 663
                                                                                                                                                                                                                                                                                                                                                                                                           A DNA sequence (AAT16102) coding for a xylanase precursor (AAR92054) was isolated from a gene library of Bacillus sp. 720/1 (LMG P-14798). The sequence (AAT16103) for the complete gene including 5' and 3' untranslated sequences was also obtd. The gene may be incorporated into a vector and expressed from either its own promoter or from the Bacillus pumilus PRL B12 promoter (see AAQ73996), and used for prodn. of recombinant thermostable xylanase in transformed hosts, pref. Bacillus licheniformis or B. pumilus. The enzyme is useful in the paper-pulp, animal feed and baking industries.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacillus derived xylanase active over wide pH range treatment of paper pulp, animal feeds and in bakery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAT16102 standard; DNA; 744
                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 9; Page 54-55; 94pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1996-117341/13.
P-PSDB; AAR92054.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             De Buyl E,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17-MAY-1995;
26-JUL-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19-JUL-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AU9525086-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacillus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     baking; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Xylanase; thermostable enzyme; paper; pulp; bleaching; feedstuff;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Xylanase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAT16102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (SOLV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          199
                                                 142
                                                                                                                                                                                                                                                          663;
                                                                                                  13
                                                                                                                                                     82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOLVAY SA.
SOLVAY & CIE.
                                                                                                                                                                                                                                                                                      Similarity
                                                                                       GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                              GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                    CAPATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                  744 BP; 246 A; 144 C; 160 G; 194 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    precursor
AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                   CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Detroz R,
                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    strain 710/1 (LMG P-14798)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             95BE-0000448
94BE-0000706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag= a
82..744
/*tag= b
/EC_number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          95AU-0025086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entry
                                                                                                                                                                                                                                                          100.0%; Score 663; DB 17;
100.0%; Pred. No. 1.4e-188;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lahaye
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3.2.1.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۶
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ledoux
                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  goods
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                used
                                                                                                                                                                                                                                                                                                                    744;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ä
                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                          Gaps
                                                                                                  120
                                                                                                                                                     141
180
                                              201
                                                                                                                                                                                                         8
```

a

a ઠે g ઠે 셤 ઠે 8 ઠે 요 ò g ò g ð 셤 ò

ઠે

```
1301 ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC 1360
                                                                                                                                                                                                                                                                                                                                                                                                         A DNA sequence (AAT16102) coding for a xylanase precursor (AAR92054) was isolated from a gene library of Bacillus sp. 720/1 (LMG P-14798). The gene may be incorporated into a vector and expressed in transformed hosts, pref. Bacillus licheniformis or Bacillus pumilus, for prodn. of thermostable mature xylanase (AAR92053). The enzyme is useful in the paper pulp, animal feed and baking industries.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    701 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1061 ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1001 TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITAAACAATATIGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>AACCACTTTAGAGCGTGGGAAAACTTAGGGGATGAATATGGGGAAAATGTATGAAGTCGCG</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gape
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
100.0%; Score 663; DB 17; Length 1513;
Best Local Similarity 100.0%; Pred. No. 1.9e-18%;
Matches 663; Conservative 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                       in
                                                                                                                                                                                                                                                                                         goods
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1513 BP; 500 A; 282 C; 271 G; 460 T; 0 other;
                                                                                                                                                                                                                                                                                     Bacillus derived xylanase active over wide pH range treatment of paper pulp, animal feeds and in bakery
                                                                                                                                                                        Ledoux P;
                                                                                                                                                                                                                                                                                                                                                            Claim 10; Page 59-61; 94pp; English.
                                                                                                                                                                        Lahaye A,
                             95BE-0000448.
94BE-0000706.
                                                                                                                                                                        E, Detroz R,
                                                                                                (SOLV ) SOLVAY SA.
(SOLV ) SOLVAY & CIE.
                                                                                                                                                                                                                  WPI; 1996-117341/13.
P-PSDB; AAR92054.
                             17-MAY-1995;
26-JUL-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                        De Buyl
       8 X C C C C C X X X I X B B X I X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B X B B X B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B B X B X B B X B X B X B B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B X B 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99
                                                                          240
                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                681
                             261
                                                                                                                         321
                                                                                                                                                                                                                                                                                                                441
                                                                                                                                                                                                                                                                                                                                                                                                              501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        381
TATITATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACCACTITAGAGCGTGGGGAAAACTIAGGGATGAATATGGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                             TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                 TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                              TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                               ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                           ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACCACTITAGAGCGTGGGAAAACTTAGGGATGAATATGGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAAACTTTGGATAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        thermostable enzyme; paper; pulp; bleaching; feedstuff;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             strain 710/1 (LMG P-14798)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /*tag= d
/EC number= 3.2.1.8
1367..1513
/*tag= e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAT16103 Btandard; DNA; 1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95AU-0025086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /*tag= a
620..1366
/*tag= b
620..600
/*tag= c
701..1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1..619
/*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAT 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAT 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Xylanase gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19-JUL-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacillus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AU9525086.-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    08-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Xylanase; t
baking; ss
                                                                                                                                                                                                                                                                                                                                                                                                           442
                                                                          181
                                                                                                                    262
                                                                                                                                                                   241
                                                                                                                                                                                                                  322
                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                             382
                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAT16103
ID AAT1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 3
```

ö

820

760 120 880

240 940

180

1240

9

9

540

1000

300

1060

360

1120

420

1180

480

```
RRESULT 4
RAV1306 1
ID AAV13
XX
AAV13
XX
AAV1
XX
AAV1
XX
AAV1
XX
AAV1
XX
Baci
XX
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT The CDS
FT 10-M
XX
XX
FT 10-M
XX
XX
FT 10-M
XX
XX
Baci
XX
FT 10-M
XX
XX
FT 10-M
XX
XX
Baci
X
                                           Ś
                                                                                                    ₽
                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    र्
문
                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                     The present sequence encodes a polypeptide with xylanase activity used in an example of the present invention. The present invention describes a novel method for providing a novel DNA sequence encoding a polypeptide from a microorganism with an activity of interest. The method comprises:

(i) PCR amplification of the DNA with PCR primers with homology to (a) known gene(s) encoding a polypeptide with an activity of interest; (ii) linking the obtained PCR product of a 5' structural gene sequence and a 3' structural gene sequence; (iii) expressing the resulting hybrid DNA sequence; (iv) screening for hybrid DNA sequence encoding a polypeptide with the activity of interest or a related activity; and (v) isolating the hybrid DNA sequence identified in step (iv). This method provides for identification and isolation of sequences from microorganisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           microorganism;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacillus sp.; xylanase; glycosyl hydrolase family 11; isolation; microorganism; identification; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Glycosyl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19-MAY-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAV13067;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAV13067
                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example 1; Page 31-32; 72pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Isolating novel DNA sequences from for culturing the microorganism
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dalboge H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10-MAY-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20-NOV-1997.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9743409-A2
                                                                                                                                                                                                                                                                                                                                                                  without having
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (NOVO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1998-008878/01.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               199
  142
                                                                                                                                                                                                             645;
                                                61
                                                                                                    82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NOVO-NORDISK AS
                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             đв
GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCCAATGG
                                   GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCCAATGG
                                                                                                      CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                    CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -8
-8
                                                                                                                                                                                                                                                                                                                  744 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Diderichsen
                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 663
                                                                                                                                                                                                                                                                                                                                                                     to cultivate and isolate the microorganism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96DK-0000562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97WO-DK00216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                  249 A; 146 C; 157 G; 192 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag= a
/product= "glycosyl hydrolase family 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         family 11 xylanase DNA derived from Bacillus
                                                                                                                                                                                                                                95.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kauppinen
                                                                                                                                                                                                                                   Score 634.2;
Pred. No. 6e
                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 microorganisms -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                      6e-180;
                                                                                                                                                                                                                                                              DB 19;
                                                                                                                                                                                                             18;
                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                            Length 744;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    without the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             xylanase"
                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ф
                                                                                                                                                                                                             Gaps
                                                                                                      141
                                                   120
                                                                                                                                                          60
                                                                                                                                                                                                             0
```

```
RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
02-JUL-1993;
30-NOV-1994;
06-JUN-1995;
                                                                                                                                                                                                   Xylanolytic enzyme; Bacillus agaradherens NCIMB 40482; breakdown; agricultural waste; alcohol fuel; enzymatic treatment; animal feed; release; free pentose sugar; dissolving pulp; cellulose; bio-bleaching; wood pulp; lignocellulostic material; animal feed additive; ss.
                                                                                                                                         CDS
                                                                                                                                                                           Bacilluc agaradherens.
                                                                                                                                                                                                                                                                  DNA encoding a Bacillus agaradherens xylanolytic enzyme
                                                                                                                                                                                                                                                                                           25-MAR-2003
18-AUG-1998
                                                                                                                                                                                                                                                                                                                                AAV30255;
                                                                                                                                                                                                                                                                                                                                                          AAV30255
                                                   16-AUG-1996;
                                                                          23-JUN-1998
                                                                                                   US5770424-A
                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                      742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACAATGTTAACAACATATTCCGTAAAGGTAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                                                                                                                                                                                                                       standard; DNA; 871
                                                                                                                                                                                                                                                                                                                                                                                                                                          AAT 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACAAGAGCATAACTCTAGATAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACCACTTTAGAGCGTGGGAAAACTTAGGGGATGAATATGGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATTTATGCGTCTATGGTTGGACTGTTGACCCCTCTTGTCGAATATTATATTTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAACAAGTTGGTAACATGTCCATAAACTATGGCGCAAACTTCCAGCCAAACGGAAATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                      AAT 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAACATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACATATGATATCTATGAAACTCTTAGAGTCAATCAGCCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGGGCAACTGGCGTCCACCAGGGGCAACGCCTAAGGGAACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATTTATGCGTCTATGGTTGGACTGTTGACCCCTCTTGTCGAATATTATATTGTCGATAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTAAACAATATTGGAGTGTCCGAAGATCGAAACGCACGAGTGGCACAATTTCTGTCAGC
                                                                                                                                                                                                                                                                                          (updated)
(first entry)
93WO-DK00218.
94US-0343600.
95US-0470398.
                                                 96US-0698978
                                                                                                                                        Location/Qualifiers 82..747
                                                                                                                              /*tag=
                                                                                                                              þ
                                                                                                                                                                                                                                                                                                                                                          ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           501
```

S

```
GATAGCGGTGGCTCTGGGACAATGATCTCAATCATGGCGGTACGTTCAGTGCCCAATGG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from Bacillus sp. 1-43-3. Fragments of the sequence (e.g. the internal fragments given in AAQ92876 and AAQ92877) may be amplified by polymerase chain reaction, e.g. using primers with sequences AAQ92866, AAQ92866, AAQ92868 and AAQ92869. The DNA may be cloned in Escherichia coli using a plasmid vector for recombinant xylanase production. The xylanase may be used in the paper and pulp industries, where it produces an increase in $ ISO brightness of softwood pulp of at least 1.0 over non-enzymatically treated pulp in am ECF pulp bleaching process, at ph 9.0 and 65 deg C. The enzyme may be used in production of paper, board and flutf pulp, and has low cellulase activity. The increased brightness
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pulp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The sequence encodes an alkaline endo-1,4-beta-D-xylanase (G-type)
                                                                                                                                                                                                                                                                                                                                          thermostable alkaline endo-1,4-beta-D-xylanase gene; cloning; polymerase chain reaction; Escherichia coli; EC-3.2.1.8; paper; pulp; bleaching; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  í,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94.2%; Score 624.6; DB 16; Length 744; 96.4%; Pred. No. 4.6e-177; ive 0; Mismatches 24; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             - useful in paper and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              produced using the xylanase allows reduction in the amount of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₹
ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 744 BP; 248 A; 145 C; 159 G; 192 T; 0 other;
                                                                                                                                                                                                                                                                                                        Thermostable alkaline endo-1,4-beta-D-xylanase gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Farrell RL, Goedegebuur F, Herbes WT, Herweijer M
Iverson S, Jones BE, Quax WJ, Van Beckhoven RFWC;
Van der Kleij WA, Van Solingen P, Williams DP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Novel xylanase enzyme active at high pH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 4; Page 42-43; 54pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                            Bacillus sp. 1-43-3 (CBS 672.93).
                                                                                                                                                                                            AAQ92878 standard; DNA; 744 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93EP-0203694.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94WO-EP04312.
                                                                                                                                                                                                                                                                      12-FEB-1996 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (KONN ) GIST-BROCADES NV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity 96.4
Matches 639; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bleaching chemicals used.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1995-246385/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P-PSDB; AAR76551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   prodn. processes
                                                          AAT 663
                                                                                              AAT 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23-DEC-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9518219-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-DEC-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       06-JUL-1995
                                                          661
                                                                                              742
                                                                                                                                                                                                                                  AAQ92878;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              79
                                                                                                                                                      RESULT 6
AAQ92878
                    음
                                                        ઠે
                                                                                              셤
                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATAGCGGTGGCTCTGGGACAATGATTCTCTAATCATGGCGGTACGTTCAGTGCCCAATGG 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                          PL;
                                                                                                                                                                                                                                                                                                    The present sequence encodes a xylanolytic enzyme of Bacillus agaradherens NCIMB 40482. Xylanolytic enzymes are used for enzymatic breakdown of sgricultural wastes for production of alcohol fuels, enzymatic treatment of animal feeds to release free pentose sugars, manufacturing of dissolving pulps yielding cellulose and bio-bleaching of wood pulp. They are also used for treatment of lignocellulostic material e.g. paper and pulp, or as an animal feed additive. (Updated on 25-WAR-2003 to correct PR field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGGGCAACTGGCGTCCACCAGGGCCAACGCCTAAGGGAACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITAAACAATATIGGAGTGTCCGAAGATCGAAACGCACGAGTGGCACAATTICTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAACAAGTTGGTAACATGTCCATAAACTATGGCGCAAACTTCCAGGCAAATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGGGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACCACTITAGAGCGTGGGAAAACTTAGGGATGAACATGGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGAAGATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                          Jorgensen
                                                                                                                                                                    DNA construct encoding Bacillus agaradherens xylanolytic enzyme - and vectors and Bacillus cells containing these, useful for recombinant production of the enzyme for use in agricultural waste breakdown and lignocellulostic material treatment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 19; Length 871;
                                                        Schuelein M, Olsen AA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 95.7%; Score 634.2; DB 19; Length Best Local Similarity 97.3%; Pred. No. 6.5e-180; Matches 645; Conservative 0; Mismatches 18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 871 BP; 283 A; 171 C; 179 G; 238 T; 0 other;
                                                                                                                                                                                                                                                                  Claim 1; Columns 11-14; 10pp; English.
                                                        Bisgard-frantzen H,
                  (NOVO ) NOVO-NORDISK AS
                                                                                                                WPI; 1998-376805/32.
                                                                                                                                P-PSDB; AAW60562
                                                      Outtrup H,
                                                                          Dambmann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
```

g

g

ઠે

g

δ

요

ઠ

g

ò

g ò g

ò

a

ò

a

ð g

à

ö

```
RRESULT 7
AAV13074
ID AAV13
XX AAV13
XX AAV1
XX AAV1
XX Yyla
XX XYla
XX Bacl
XX Bacl
XX Bacl
XX Synt
COS Synt
COS Synt
COS Synt
XX Synt
XX W097
XX W097
XX W097
XX 10-M
XX 10-M
XX (NOV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     र्
                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                       10-MAY-1996;
                                                                                                                                                                     Synthetic
Bacillus :
                                                                                                                                                                                                     Bacillus sp.; xylanase; glycosyl hydrolase family 11; microorganism; identification; hybrid DNA; ss.
                                                                                                                                                                                                                                                             19-MAY-1998
                                                                                                                                                                                                                                                                                  AAV13074;
 (NOVO ) NOVO-NORDISK AS
                                             12-MAY-1997;
                                                                   20-NOV-1997
                                                                                         WO9743409-A2
                                                                                                                                                                                                                                    Xylanase activity positive clone DNA
                                                                                                                                                                                                                                                                                                        AAV13074 standard;
                                                                                                                                                                                                                                                                                                                                                                                                          679
                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                     619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     199
                                                                                                                                                                                                                                                                                                                                                              739
                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                139
                                                                                                                                                                     дв
                                                                                                                                                                                                                                                                                                                                                             AAT
                                                                                                                                                                                                                                                                                                                                                                                                                        ATTAACGGTAACCCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AACCACTTTAGAGCGTGGGAAAACTTAGGGATGATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAACAAGTTGGTAACATGTCCATAAACTATGGCGCAAACTTCCAGCCAAACGGTAATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATAATGTTAACAATATATTATTCCGTAAAGGTAAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACAATGTTAACAACATATTATTCCGTAAAAGGTAAAAAATTCAATGAAACACAAAACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                   AAT 663
                                                                                                                                                                                                                                                                                                                                                                                                          ATTAACGGAAACCCTCTCTCAACTATTAGTAATAACGAGAGCATAACTCTAGATAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTAAACAATATTGGAGTGTCCGAAGATCGAAACGCACGAGTGGCACAATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGAACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                             (first
                        96DK-0000562
                                             97WO-DK00216
                                                                                                              /*tag= a
/product=
                                                                                                                                               Location/Qualifiers
                                                                                                                                      ..747
                                                                                                                                                                                                                                                                                                        DNA;
                                                                                                                                                                                                                                                           entry)
                                                                                                              "positive
                                                                                                               clone
                                                                                                                                                                                                                                     SEQ ID NO:11
                                                                                                              for
                                                                                                               xylanase
                                                                                                                                                                                                                 isolation;
                                                                                                               activity"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                      678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      258
                                                                                                                                                                                                                                                                                                                                                                                                           738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      540
```

```
X4XEXELX8X5555555555555555
                                                  The present sequence represents a positive clone for xylanase activity from an example of the present invention. The present invention adescribes a novel method for providing a novel DNA sequence encoding a polypeptide from a microorganism with an activity of interest. The method comprises: (i) PCR amplification of the DNA with PCR primers with homology to (a) known gene(s) encoding a polypeptide with an activity of interest; (ii) linking the obtained PCR product of a 5' structural gene sequence and a 3' structural gene sequence; (ii) expressing the resulting hybrid DNA sequence; (iv) screening for hybrid DNA sequences encoding a polypeptide with the activity of interest or a related activity, and (v) isolating the hybrid DNA sequence identified in step (iv). This method provides for identification and isolation of sequences from microorganisms without having to cultivate and isolate the
                                                                                                                                                                                                                                                                                                                                                 Example 1; Page 35; 72pp; English
                                                                                                                                                                                                                                                                                                                                                                                     Isolating nove for culturing
                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 1998-008878/01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dalboge H,
                                                                                                                                                                                                                                                                                                                                                                                       ring the microorganism
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Diderichsen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₩,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kauppinen
                                                                                                                                                                                                                                                                                                                                                                                                            microorganisms -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sandal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ..
                                                                                                                                                                                                                                                                                                                                                                                                            without the
                                                                                                                                                                                                                                                                                                                                                                                                            need
```

Query Match Sequence 747 BP; 236 76.6%; 85.4%; A; 168 C; 154 G; 189 Score 507.8; DB 19; Pred. No. 5e-142; T; 0 other; DB 19; Length

Local Similarity

```
Matches
                    601
                                                                                                                                                                                                                                                                    442
                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                         382
                                                                                                                                                           481
                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                             322
                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 CAMATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCCAATGG
ATTANCGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTTGGATAAAAAC
                                                                                                                                                                                                                                                                                            ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA 420
                                                                                                                                                                                                                                                                                                                                                          TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                 TATTTATGCGTCTATGGTTGGACTGTTGACCCCTCTTGTCGAATATTATATTTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                              CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                  TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                        TGGGGCAACTGGCGTCCACCAGGGGCAACGCCTAAGGGAACCATCACTGTTGACGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                             TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGATAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAACAAGTTGGTAACATGTCCATAAACTATGGCGCAAACTTCCAGCCAAACGGAAATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAMATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                          AACCACTTTAATGCCTGGGCTGCTCTTGGCATGAATATGGGTGCATTCAATTACCAGATC
                                                                                                                                                           AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                              TTCAATCAGTACTGGTCGATTCGACAGAGCAAGCGGACCAGCGGCACTGTCACTACGGCA
                                                                                                                                                                                                                                                                    ACGTATGATATCTACAAGCACCAACAGGTCAATCAGCCATCTATTCAGGGCACCGCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                        441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                    660
                                                      681
                                                                                         600
                                                                                                                            621
                                                                                                                                                             540
                                                                                                                                                                                                                                                                    501
                                                                                                                                                                                                                                                                                                                                                                                                           381
                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           201
```

밁 Ś 밁 á

S

Ś

밁

S 문

밁

뮍 S 밁 S 밁 Ś 밁 á 밁 S

```
(first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacillus pumilus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       02-AUG-1995
                                                                                                                                                                                                                                                             301
                                          61
                                                                  593
                                                                                                                                                    181
                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAQ80923;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Key
5'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAQ80923
                                                            g
                                                                                       ð
                                                                                                                     g
                                                                                                                                                                         셤
                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                               요
                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                              g
                                      ઠે
                                                                                                                                                   ò
                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present sequence is a DNA encoding xylanase A (XynA) from clostridium stercorarium. XynA contains family VI cellulose binding domain (CBD) which is homologous to the CBD of xylanase 2 (XynZ) of Clostridium thermocallum. XynZ is an enzymatic component of C. thermocellum cellulosome and has a multi-domain structure which includes a dockerin domain, a catalytic xylanase domain, a family VI cellulose binding domain and a domain of unknown function. The unknown domain in the N-terminal region of XynZ has been found to contain feruloy! (phenolic acid) esterase which is involved in the degradation of plant cell wall material. The novel feruloyl esterase is thermostable, easy to purify, has high temperature optima and stable over a wide pH range. The enzyme is used for treating grasses or other plant materials used in the pulp and paper
                                                                                                                                                                                                                            Xylanase A; XynA; cellulosome; feruloyl esterase; phenolic acid esterase; thermostable; ferulic acid; wheat bran; agricultural byproduct; treat; grass; paper and pulp industry; feed processing; food additive; plant cell wall material; degradation; ds.
ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACAAGAGCATAACTCTAGATAAAAAC 741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New recombinant DNA molecule comprising a sequence encoding feruloyl esterase protein, useful for treating grasses and other plant materials used in pulp and paper industries, feed processing and food additives -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 21; Length 2364;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2364 BP; 791 A; 428 C; 458 G; 687 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              industries, in feed processing and as a food additive.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    38.5%; Score 255.4; DB 2 65.6%; Pred. No. 4.2e-66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ij
                                                                                                                                                                                                      Clostridium stercorarium xylanase A DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Pages 97-99; 105pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ljungdahl
                                                                                                                                                                                                                                                                                                                                                                    /product= "Xylanase A"
                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
440..1978
/*tag= e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (UYGE-) UNIV GEORGIA RES FOUND INC
                                                                                                                      AAZ51821 standard; DNA; 2364 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US20304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98US-0099136
                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                Clostridium stercorarium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kataeva I,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000-256991/22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 405; Conserv
                                                    744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P-PSDB; AAY70523
                            AAT 663
                                                                                                                                                                                                                                                                                                                                                                                              WO200014243-A1
                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                   03-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                04-SEP-1998;
                                                                                                                                                                           04-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                        16-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Blum DL,
                            661
                                                                                                                                                AAZ51821;
                                                    742
                                                                                                        AAZ5182:
셤
                         ઠે
                                                 ద
```

7

6; Gaps

9

CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA

0; Mismatches 206; Indels

405; Conservative

ઠે

```
950 ACATTCCAACAATATTGGAGTGTTCGTACATCCAAGAGAACAACGAACAATATCTGTC 1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1010 ACTGAACATTITAAACAGTGGGAAAGAATGGGCATGCGAATGGGTAAGATGTATGAGTT 1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1070 GCTCTTACCGTTGAAGGTTATCAGAGCAGTGCGTACGCTAATGTATACAAGAATGAAATC 1129
                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                       889
                                                                                                                                                                                                                                                                                                                                                                                                                                            417
121 AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAATTCAATGAAACACAAACACAC 180
                                                                                                                                                                       709
                                                                                                                                                                                                                                                 710 caagaarraggagacaragragrigaararggcrgrgarracaarccaaacggaaarrcc 769
                                                                                                                                                                                                                                                                                       TATITIATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT 300
                                                                                                                                                                                                                                                                                                                             770 TATTTGTGTGTTTACGGTTGGACAAGAAATCCACTGGTTGAATATTACATTGTAGAAAGC 829
                                                                                                                                                                                                                                                                                                                                                                   357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              890 GGTACTTATGAAATATATGAAACTACCCGGGTAAATCAGCCTTCCATCGATGGAACTGCG 949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            538 GCGCTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTA 597
                                                         GATAGCGGTGGTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                           GA---CTACGGAAATACGATTATGGAACTTAACGACGGTGGTACTTTAGTTGTCAATGG
                                                                                                                                                                       650 AGTAATATCGGTAATGCACTATTTAGAAAAGGGAGAAAATTTAATTCCGACAAAACCTAT
                                                                                                                                                                                                                                                                                                                                                                                                     830 récécchecrécécércéchéchéchéchéchandenéchichénengradan
                                                                                                                                                                                                             TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCAC---TGTTGATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                            358 GGAACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  478 AGCAACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      418 ACATTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag= b
/note= "base n at position 107 is not identified
in the specification"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pulping;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Xylanase; endo-1,4-beta-D-xylanase; wood pulp; pu
biobleaching; bleaching; Bacillus licheniformis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag= d
/note= "claim 11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /*tag= a
/note= "claim 12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAQ80923 standard; DNA; 1022 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAATAGGTGCAAATCC 1146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        598 AGAATTAACGGTAACCC 614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag= c
186..266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B. pumilus xylanase gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  186..869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                267..866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mat_peptide
```

```
밁
                    8
                                                 밁
                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                           8
                                                                                                                                                                               र्
                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 406; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A Bacillus pumilus PTL B12 (ATCC 55443) gene library was screened for recombinant plasmids carrying the xylanase gene. A chromosomal fragment obtained from isolate pBPX1 was subcloned and expressed in Escherichia coli JM109. The sequence of the xylanase gene (as a 1022 bp Sau3AI fragment) carried by a selected transformant is given
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Purified xylanase from Bacillus pumilus PRL B12 - esp. produced in transformed Bacillus licheniformis, and related DNA, vectors etc., used for pre-treatment of wood pulp to reduce chlorine or ozone consumption in subsequent bleaching
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-JUL-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-JAN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GB2279955-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1022 BP; 329 A; 197 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 13; Fig. 1a-1b; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Amory A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-JUL-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P-PSDB; AAR68849.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1995-039214/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ledoux
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (SOLV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAQ80923
 693
                        433
                                                 633
                                                                          373
                                                                                                     576
                                                                                                                              313
                                                                                                                                                         516
                                                                                                                                                                                  253
                                                                                                                                                                                                            456
                                                                                                                                                                                                                                      193
                                                                                                                                                                                                                                                                 396
                                                                                                                                                                                                                                                                                         133
                                                                                                                                                                                                                                                                                                                   336
                                                                                                                                                                                                                                                                                                                                                                        279
                                                                                                                                                                                                                                                                                                                                              73
                                                                                                                                                                                                                                                                                                                                                                                               13
                                                                                                                                                                                                                                                                                                                                                                                                                         406; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOLVAY
                                                                                                                                                                                                                                                                                                                   AATACCTCGATGACACTCAATAACGGCGGGGCATTTAGTGCAAGCTGGAACAATATTGGA
                                                                                                                                                                                                                                                                                                                                                                                     GACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAAGATAGCGGTGGC
                                                                                                                                                                                  AACATATTATTCCGTAAAGGTAAAAAATTCAATGAAACACAAAACACACCAACAAGITGGT
                                                                                                                                                                                                                                                                                                                                        TCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGGAACAATGTTAAC
                                                                                                                                                                                                                                                                                                                                                                        GATAATAGGATAGGGACACACAGCGGATACGATTTTGAATTATGGAAGGATTAC---GGA
 TGGAGTGTACGTCAAACAAAACGCACAAGCGGAACGGTCTCCGTCAGTGAGCATTTTAAA
                   TGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGA
                                                  TATGAAACGCTCCGTGTCAATCAGCCTTCTATCATTGGAGACGCTACCTTCAAACAATAT
                                                                        TACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACACTTTAAACAATAT
                                                                                                       CGTCCAACAGG---AACGTATAAAGGATCATTTATGCCGATGGAGGCACATATGACATA
                                                                                                                             CGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATC
                                                                                                                                                         TATGGCTGGACACAATCTCCATTAGCTGAATACTACATTGTTGAGTCATGGGGCACATAT
                                                                                                                                                                                                                                     AACATGTCCATAAACTACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTC
                                                                                                                                                                                                                                                                 AATGCCTTATTTCGAAAAGGAAAGAAGTTTGATTCCACTAAAACTCATCAACTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Andre C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SA.
& CIE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              93GB-0014780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93GB-0014780
                                                                                                                                                                                                              rccatcaactacaacecaeccttaaccceeeceeeattcctatttatetetc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag= e
/EC_number= 3.2.1.8
/note= "claim 10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               þ
                                                                                                                                                                                                                                                                                                                                                                                                                                      38.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Buy1
                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                         Score 255.2; DB 1
Pred. No. 3.4e-66;
0; Mismatches 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             229 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Detroz R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             266 T; 1 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 16; Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lahaye
                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  esp. produced
1 DNA, vectors,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ą
                                                                                                                                                                                                                                                                                                                                                                                                                         6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   given
                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                           492
                                                                                                                                                                                                                                                                                            192
                                                                                                                                                                                                                                                                                                                                                                        335
 752
                                                    692
                                                                            432
                                                                                                       632
                                                                                                                                 372
                                                                                                                                                           575
                                                                                                                                                                                    312
                                                                                                                                                                                                              515
                                                                                                                                                                                                                                        252
                                                                                                                                                                                                                                                                  455
                                                                                                                                                                                                                                                                                                                                                                                                  72
```

```
RESULT 10
AAT90972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                        WPI; 199
P-PSDB;
                              The present sequence represents a RT46B.1 xynB gene and encodes a xylanae enzyme. The present sequence is derived from a gene contained within Dictyoglomus thermophilum strain Rt46B.1. The xylanase is contained within the family of enzymes known as G-Xylanases, and has beta -1,4-xylanase activity. The enzyme has high activity and high thermal stability with optimum activity at 85 degrees Celcius and pH 6.5. The xylanase enzyme is used for the biological bleaching of cellulose products, especially paper pulp. Use of the enzyme ensures that waste streams from the biological bleaching will include less
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    xynB gene; xylanse; enzyme; Dictyoglomus thermophilum strain Rt46B G-Xylanase; beta -1,4-xylanase activity; activity; thermal stability biological bleaching; cellulose product; paper pulp; ss.
                                                                                                                                                                                                  Dictyoglomus thermophilum xylanase gene - used for producing thermally stable enzymes for the bleaching of cellulose products.
                                                                                                                                                                                                                                                                                                                                                                                                                                            mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dictyoglomus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAT90972;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAT90972
                                                                                                                                                             Disclosure; Fig 3; 34pp; English
                                                                                                                                                                                      thermally stable enzymes especially paper pulp
                                                                                                                                                                                                                                                                                                                                                         27-MAR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22-MAY-1998
                      toxic material
                                                                                                                                                                                                                                                                                                                                 29-MAR-1996;
                                                                                                                                                                                                                                                                                                                                                                                                        WO9736995-A2
                                                                                                                                                                                                                                                                                                      (PACI-) PACIFIC ENZYMES
                                                                                                                                                                                                                                          1997-503090/46.
DB; AAW30267.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCGCTTACTGTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTCTCTCAACTATTAGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCTACCGAAGCAACGGAAGTGCGAATGTCATGACGAATCAGCTGATGATTCGATAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGAATTAACGGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAATGGGAAAGCTTAGGCATGCCAATGGGAAAAATGTATGAAACAGCATTAACTGTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATATGAAAAAAGCCAGCAA
                                                                                                                                                                                                                                                                             PL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 thermophilum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first
                                                                                                                                                                                                                                                                                                                                96NZ-0286296
                                                                                                                                                                                                                                                                                                                                                         97WO-NZ00042
                                                                                                                                                                                                                                                                                                                                                                                                                                /product=
67..138
/*tag= b
139..1146
/*tag= c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers 67..1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA; 1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entry)
                                                                                                                                                                                                                                                                               ¥
                                                                                                                                                                                                                                                                                                        LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    xylanase
                                                                                                                                                                                                                                                                               Morris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         an enzyme with xylanase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   892
                                                                                                                                                                                                                                                                             ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in Rt46B.1;
stability;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    872
```

Query Match

Sequence 1190 BP;

386 A; 197

<u>ი</u> 330

T; 0 other;

Score 212.2; C; 277

BB 18;

Length 1190;

a

```
609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      662
              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                               ä
                                                                                                                                                                                                                                                                                                                                                                                         440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 542
                                                                                                                                                                                                                                                                                  242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   680
                                                                                                    209
                                                                                                                                                                                                             182
                                                                                                                                                                                                                                                320
                                                                                                                                                                                                                                                                                                                                                       302
                                                                                                                                                                                                                                                                                                                                                                                                                              362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   422
                                                                                                                                    TAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGGAA 122
                                                                                                                                                                                                                                                                                                                321 Grcárradecacrárragaarcaccrácceacararaercerandegraecrera 380
                                                                   62
                                                                                                                                                                                                                                                                                                                                                                                                                                               3 AATCGICACCGACAATICCATIGGCAACCACGAIGGCIAIGATIAIGAATITIGGAAAGA
                                                                                             AACACTAACAAGTAATGCAAGCGGTACTTTTGATGGCTACTACTATGAACTATGGAAAGA
                                                                                                                                                                        TA---CAGGGAATACAACCÁTGACTGTATACACACAAGGATTTAGCTGTCAGTGGAG
                                                                                                                                                                                                         CAATGTTAACAACATATTACCGTAAAAGGTAAAAAATTCAATGAAACACAAACACACCA
                                                                                                                                                                                                                                           CAATATAAACAATGCATTATTCAGAACAGGTAAGAAGTACAAC-----CAAAACTGGCA
                                                                                                                                                                                                                                                                                TITIATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTTG
                                                                                                                                                                                                                                                                                                                                                                                       crinardraticiardriciarcia arccirria di adamenti recenera de la companione d
                                                                                                                                                                                                                                                                                                                                                                                                                            GGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     craridacarracagaacracccereraaarcagccarcrarreregeracagcracrrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCACTITAGAGCGTGGGAAAACTTAGGGATGAATATGGGGGAAAATGTATGAAGTCGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCACTTTAGGGCATGGGCAAATAGAGGTTTAAACCTTTGGTACTATTGATCAAATTACTCT
                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATAC 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Xylanase D; xynD gene; thermostable enzyme; paper; pulp; lignin;
delignification; xylan; bleaching; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    trefetrgaagatarcaaagcagregtregectaataraacacaaatac 731
                               6
                             Indels
         Pred. No. 2.9e-53;
); Mismatches 213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (CBS 213.94)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
1..1107
/*tag= a
62.4%; Pre-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAT08142 standard; DNA; 1244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              95WO-EP02299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94EP-0201699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Extremophile isolate TG456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (updated)
(first entry)
                             369; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (KONN ) GIST-BROCADES BV.
           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Xylanase xynD gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14-JUN-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO9534662-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25-MAR-2003
12-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-DEC-1995
                                                                                                                                    63
                                                                                                                                                                        210
                                                                                                                                                                                                           123
                                                                                                                                                                                                                                             267
                                                                                                                                                                                                                                                                                183
                                                                                                                                                                                                                                                                                                                                                     243
                                                                                                                                                                                                                                                                                                                                                                                       381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAT08142;
                                                                                                                                                                                                                                                                                                                                                                                                                            303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    681
           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                  g
                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 명
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                    ઠે
                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
```

```
487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        71 TTACCTCTAATGCAACTGGGACATACGATGGTTACTACTACGAGTTGTGGAAGGACACAG 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GIGGCICTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGGAACAATG 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                131 GGAATACT---ACCATGACAGTTGACACAGGAGGATTTAGCTGTCAGTGGAGTAACA 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       128 TTAACAACATATTATTCCGTAAAGGTAAAAATTCAATGAAACACAAAAGACAACAAG 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            242 ricigeacteraagarraccractecraccracarrecaarrecaarrecrarerric 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 188 TTAACAATGCACTCTTCAGAACAGGTAAAAAGTTTAGCACTGCATGGAATCAGC----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 308 ACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        362 CATGGCGTCCGCCCGGGGCAACGTCACTTGGCACTGTAACAATTGATGGAGCAACATATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u> agracricas de recentadas de astrocas de la contracrica de la carte de la car</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCGCTTACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   548 TAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGAATTAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 TCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAAGATAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rcaaadcarddcracaaaadcrridaaccrddcracaarrgaccagarracacrcrgrd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gape
                                                                                                                                                                                                                                                                                                                                                                                                   Novel xylanase(s) having activity at 80 deg.C. or higher – obtained from anaerobic thermophilic bacteria and used in paper and pulp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A full-length xynD gene (AAT08142) codes for a thermostable G-type xylanase (AAR87012) useful in the pulp and paper industries. The gene was obtd. by genomic walking FCR of DNA from an extremely thermophilic bacterium, strain TG456 (CBS 213.94), isolated from a New Zealand hot spring. The gene can be inserted into a vector and used for the prodn. of recombinant xylanase D in microbial host (Updated on 25-MAR-2003 to correct PI field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 17; Length 1244;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ..
..
                      Moody D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
30.9%; Score 204.8; DB 17; Length
Best Local Similarity 61.0%; Pred. No. 4.8e-51;
Matches 367; Conservative 2; Mismatches 224; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1244 BP; 380 A; 215 C; 279 G; 360 T; 10 other;
                      ŝ
Forster S,
Morgan HW,
                 Iverson S,
Daniel RM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 9; Page 56-58; 77pp; English.
           Groenberg V, Williams DP,
Farrel RL, Bergquist PL,
Herweijer MA, Jones BE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          production processes
                                                                                                                                                                                                                              WPI; 1996-049690/05.
P-PSDB; AAR87012.
```

```
RESULT 12
AAQ92876
                   S
                                                    밁
                                                                              S
                                                                                                                                                                                                                          밁
                                                                                                                                    S
밁
                                                                                                                                                                   Query Match
Best Local S
Matches 158
                                                                                                                                                                                                                                                               AAQ92871-77 are examples of several different internal xylanase gene fragments which were used as specific probes to isolate full length cloned genes. AAQ92876 is from an GI-type xylanase. The DNA may be cloned in E. coli using a plasmid vector, and e.g. clone KEX106 was isolated, producing 23.7 U/ml recombinant xylanase. The xylanase may be used in the paper and pulp industries, where it produces an increase in % ISO brightness of softwood pulp of at least 1.0 over non-enzymatically treated pulp in an ECF pulp bleaching process, at ph 9.0 and 65 deg C. The enzyme may be used in production of paper, board and fluff pulp, and has low cellulase activity. The increased brightness produced using the xylanase allows reduction in the amount of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Farrell RL, Goedegebuur F, Herbes
Iverson S, Jones BE, Quax WJ, Van
Van der Kleij WA, Van Solingen P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      06-JUL-1995
                                                                                                                                                                                                                         Sequence 164 BP; 50 A; 35 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23-DEC-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacillus sp. 1-43-3 (CBS672.93)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     polymerase chain reaction; Escherichia coli; EC-3.2.1.8; paper; pulp; bleaching; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      thermostable alkaline endo-1,4-beta-D-xylanase gene; cloning;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19-APR-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAQ92876 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 7; Page 40-41; 54pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel xylanase enzyme active at high
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1995-246385/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24-DEC-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9518219-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Thermostable alkaline xylanase gene internal fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (KONN ) GIST-BROCADES NV.
121
                         400
                                                                                340
                                                                                                                                    280 GAATATTATATTGTCGACAGTTGGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGG
                                                     61
                                                                                                                                                                   158;
                                                                                                             _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ргосеввев
                                                                                                                                                                                  Similarity
                                                      ACCATCACTGTTGATGGAGGAACATATGATATCTATGAAACTCTTAGAGTCAATCAGCCC
                                                                                                            GAATATTATATTGTCGACAGTTGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGA
              TCCATTAAGGGGATTGCCACATTTAAACAATATTGGAGTGTTCG 443
                                                                       TCCATTAAGGGGATTGCCACATTTAAACAATATTGGAGCGTCCG
                                                                                                                                                                                                                                                      chemicals used
                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               93EP-0203694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94WO-EP04312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA;
                                                                                                                                                                                23.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     164
                                                                                                                                                                   0
                                                                                                                                                                Score 154.4; DB 10;
Pred. No. 2.7e-36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Herbes WT, Herweijer
U, Van Beckhoven RFWC;
gen P, Williams DP;
                                                                                                                                                                                                                             39
                                                                                                                                                                                                                           <u>۵</u>
                                                                                                                                                                                                                           40 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PH -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Herweijer MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       useful in
                                                                                                                                                                                              DB 16; Length 164;
                                                                                                                                                                    Indele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     paper and
164
                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     drnd
                                                        120
                                                                                                             60
                                                                                 399
                                                                                                                                                                    0
```

RESULT 13
AAQ92875
ID AAQ92

AAQ92875 standard; DNA; 164 BP.

RESULT 14
AAX90405
ID AAX90

AAX90405

standard;

DNA:

1375

25-MAR-2003 AAX90405;

```
밁
                                                                                            á
                                                                                                                              밁
                                                                                                                                                                                                                                                               X S X E X S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               *****
                             5
                                                                                                                                                                                              Query Match
Best Local S
Matches 156
                                                                                                                                                                                                                                                                                       AAQ92871-77 are examples of several different internal xylanase gene fragments which were used as specific probes to isolate full length cloned genes. AAQ92875 is from an G-type xylanase. The DNA may be cloned in E. coli using a plasmid vector, and e.g. clone KEX106 was isolated, producing 23.7 U/ml recombinant xylanase. The xylanase may be used in the paper and pulp industries, where it produces an increase in $ ISO brightness of softwood pulp of at least 1.0 over non-enzymatically treated pulp in an ECF pulp bleaching process, at pH 9.0 and 65 deg C. The enzyme may be used in production of paper, board and fluff pulp, and has low cellulase activity. The increased brightness produced using the xylanase allows reduction in the amount of bleaching chemicals used.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Farrell RL, Goedegebuur F, Herbes WT, Herweijer MA;
Iverson S, Jones BE, Quax WJ, Van Beckhoven RFWC;
Van der Kleij WA, Van Solingen P, Williams DP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             thermostable alkaline endo-1,4-beta-D-xylanase gene; cloning; polymerase chain reaction; Escherichia coli; EC-3.2.1.8; paper; pulp; bleaching; ds.
                                                                                                                                                                                                                                                             Sequence 164 BP; 50 A; 35 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example 7; Page 40; 54pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1995-246385/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24-DEC-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-DEC-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             06-JUL-1995.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacillus sp. 1-25-2 (CBS671.93).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Thermostable alkaline xylanase gene internal fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19-APR-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAQ92875;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Novel xylanase enzyme active at high
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (KONN ) GIST-BROCADES NV
                                                                                                                                                                                                             Local Similarity
 121
                              400
                                                                                               340
                                                                                                                                                             280 GAATATTATATTGTCGACAGTTGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGG 339
                                                                                                                                                                                              156;
                                                               61
                                                                                                                              μ.
                                                                                     TCCATTAAGGGGATTGCCACATTTAAACAATATTGGAGTGTTCG 443
                                                                                                                              GAATATTATATTGTCGACAGTTGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGA
TCCATTAAGGGGATTGCCACATTTAAACAATATTGGAGCGTCCG 164
                                                             ACCATCACTGTTGATGGAGGAACATATGATTACTATGAAACTCTTAGAGTCAATCAGCCC
                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93EP-0203694.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94WO-EP04312.
                                                                                                                                                                                                             22.8%;
95.1%;
                                                                                                                                                                                               0
                                                                                                                                                                                              Score 151.2; 1
Pred. No. 2.5e
0; Mismatches
                                                                                                                                                                                                                                                             39 G; 40 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ηď

    useful in

                                                                                                                                                                                                             5e-35;
                                                                                                                                                                                                                            DB 16;
                                                                                                                                                                                               8
                                                                                                                                                                                               Indels
                                                                                                                                                                                                                            Length 164;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             paper and
                                                                                                                                                                                              0;
                                                                                                                                                                                            Gaps
                                                                                               399
                                                               120
                                                                                                                              60
```

```
Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAT64930
                      셤
                                                                                     g
                                                                                                                         ò
                                                                                                                                                           g
                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                    ò
                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present invention describes a culture medium obtained from the culture of a recombinant host cell that is not Actinomadura flexuosa and has been transformed with a vector encoding a protein having xylanase activity, where the protein comprises an amino acid sequence from a xylanolytic fragment of the amino acid sequence in AAY24481.

Also described is an enzyme preparation derived from the culture medium. The enzyme composition can be used in a method for biobleaching, modifying plant biomass properties, especially the reduction of lignin content in pulp and paper processing. The xylanases are hemicellulases which partially degrade the hemicellulose and enhance the extractability of lignins by conventional chemical bleaching of wood pulp. It can be used alone or as a supplement to other treatments that reduce lignin content of wood pulp, increase its drainability or decrease its water retention. The culture medium can be used directly without the need to purify the enzymes. Actinomadura flexuosa xylanases have a ph optimum and thermostability desirable for the biobleaching of wood pulp reducing the need to acidify the pulp prior to xylanases reatment. The xylanases partially degrade the hemicellulose in wood pulp which enhances the extractability of lignins by conventional bleaching chemicals and result of environmentally underly conventional bleaching chemicals and formation of environmentally underly conventional bleaching chemicals and result of environmentally underly conventional bleaching chemicals and created processive the consumption of bleaching chemicals reducing the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      formation of environmentally undesired organic compounds. The present sequence encodes Actinomadura sp. DSM43186 35 kDa xylanase. N.B. This sequence is indexed from US5935836 which is a treat as
                                                                     Actinomadura sp. DSM43186; xylanase; Actinomadura flexuosa; lignin; thermostable; biobleaching; wood pulp; bleaching; hemicellulase; paper processing; hemicellulose; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Actinomadura xylanase sequences and method of use. - No abstract
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Maentylae A;
                                   Actinomadura sp. DSM43186 35 kDa xylanase encoding DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1375 BP; 265 A; 517 C; 400 G; 193 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lantto R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Updated on 25-MAR-2003 to correct DR field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Vehmaanperae J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lahtinen T,
                                                                                                                                                                                                                    /*tag= a
/product= "xylanase"
                                                                                                                                                                             Location/Qualifiers
303..1337
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure, Fig 13; 54pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              specification for F19503639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (ALKO-) ALKO GROUP LTD.
(ALKO-) ALKO-YHTIOET OY.
(ROHG ) ROEHM ENZYME FINLAND OY.
                                                                                                                                                                                                                                                                                                                                                                                           94US-0282001.
94US-0332412.
95FI-0003639.
                                                                                                                                                                                                                                                                                                                                          95US-0468812
                                                                                                                                                                                                                                                                                                                                                                            95US-0468812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kristo P,
Suominen P,
(first entry)
                                                                                                                                            Actinomadura flexuosa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1996-141347/38.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; AAY24480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fagerstrom R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Paloheimo M,
                                                                                                                                                                                                                                                                                                                                          06-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                            06-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                              29-JUL-1994;
                                                                                                                                                                                                                                                                   US5935836-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                  31-JUL-1995;
28-SEP-1999
                                                                                                                                                                                                                                                                                                       10-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              basic
                                                                                                                                                                               Key
```

```
497
608 GACCGTGGACCTACAACGCCTCCTTCAACCGGTCGGGTAACGGCTACCTCAACGTCTACAGG 667
                                                  317
                                                                      318 ACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATTTTTACGA 377
                                                                                                                                            728 cacces---cacctacaaggcaccercaccaccgacgggaacgracgacarcracga 784
                                                                                                                                                                            GACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGGAG 437
                                                                                                                                                                                                           785 GACCTGGCGGTACAACGCGCGCGTCCATCGAGGCACCCGGACCTTCCAGCAGTTCTGGAG 844
                                                                                                                                                                                                                                                                          845 CGTCCGGCAGCAGAGCGGACCAGCGGCACCATCACCATCGGCAACCACTTCGACGCTG 904
                                                                                                                                                                                                                                                                                                         498 GGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCGCTTACTGTAGAAGGCTA 557
                                                                                                                                                                                                                                                                                                                                        905 GGCCCGCGCCGCCATGAACCTGGGCAGCCACGACTACCAGATCATGGCGACCGAGGGCTA 964
                                                                                                                                                                                                                                                                                                                                                                                           965 CCAGAGCAGCGGTAGCTCCCACCATCAGCGAGGGTGGCAACCCCGGCAACCC 1021
                                                                                                                                                                                                                                                                                                                                                                        558 TCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGAATTAACGGTAACCC 614
                                                                                                                                                                                                                                          TGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGAGCGTG
                                                TTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGCAACTGGCGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Actinomadura flexuosa; xylanase; cellulase; recombinant; fungal host; pulp; paper industry; enzyme; bleaching; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lahtinen T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Production of bacterial proteins, especially xylanase(s) and cellulase(s) - by recombinant expression in a filamentous fungal host, useful particularly in the pulp and paper industries.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Actinomadura flexuosa 35 kDa (AM35) xylanase encoding DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lantto R, Fagerstroem R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "AM35 xylanase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 7; Pages 65-67; 127pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAT64930 standard; DNA; 1375 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Paloheimo M, 1
Vehmaanperae J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97WO-FI00037.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96US-0590563.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /*tag= a
/product= '
432..1334
/*tag= b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (updated)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  303..1337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (ALKO-) ALKO GROUP LID.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Actinomadura flexuosa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1997-393693/36:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P-PSDB; AAW23338.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Maentylae A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24-JAN-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9727306-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26-JAN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31-JUL-1997.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25-MAR-2003
02-APR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Suominen P,
                                                                                                                                                                                                                                          438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAT64930;
                                                258
                                                                                                                                                                              378
                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
```

ä

3; Gaps

DB 17; Length 1375;

Score 119.4; DB 17; Length Pred. No. 2.1e-25; 0; Mismatches 176; Indelè

18.0%; 57.1%;

Query Match Best Local Similarity 57.14 Matches 238; Conservative

CC This DNA encodes the Actinomadura flexuosa 35 kDa (AM35) xylanase. The CC bacterial protein xylanase can be produced by a recombinant expression conceptor in a filamentous fungal host. The vector comprises a promoter coperably linked to a DNA sequence of a filamentous fungus secretable protein or one or more functional domains of the protein, which is fused confirmed with a DNA sequence encoding the bacterial protein. The compression vector is used particularly for the production of bacterial proteins are very economical to provide and use. Isolation of a specific enzyme from the culture fluid is unnecessary because the corymes may be used in a crude form. As the enzymes are secreted into the desired enzyme preparation, and there is no need to extract an enzyme content estimates. The Actinomadura flexuosa xylanases have a pH optimum and thermostability that are desirable for enzyme aided bleaching of wood content the culture shaded on the production of the culture medium need be recovered to obtain the culture medium aided bleaching of wood content and the culture aided bleaching of wood contents and the production during beating, enzymatic increase of drainage rates and ink cremostability that are desirable for enzyme aided bleaching of wood contents and the culture aided bleaching of wood contents. The bacterial xylanases can be used in the pulp and paper industry can enzyme-enhanced bleaching of paper making pulp, enzymatic culture removal of secondary fibre as well as enzymatic pitch removal. They can culture as well as enzymatic pitch removal. They can culture the production during beating plant blomass. Query Match 18.0 Best Local Similarity 57.1 Matches 238; Conservative Sequence 1375 BP; 265 A; 517 C; 400 G; 193 T; 0 other; 965 558 905 498 845 438 785 378 728 318 ACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACGA 377 668 258 TTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGCAACTGGCGTCC 317 608 GACCGTGACCTACAACGCCTTCCAACCCCGTCGGGTAACGGCTACCTCACGCTCTACGG 198 GTCCATAAACTACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGG 257 GACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGGAG 437 CCAGAGCAGCGGTAGCTCCACCGTCTCCATCAGCGAGGGTGGCAACCCCGGCAACCC 1021 TCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGAATTAACGGTAACCC 614 GGCCCGCGCGCATGAACCTGGGCAGCCACGACTACCAGATCATGGCGACCGAGGGCTA 964 GGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCGCTTACTGTAGAAGGCTA 557 CGTCCGGCAGAAGCGGACCAGCGGCACCATCACCATCGGCAACCACTTCGACGCCTG 904 TGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGAGCGTG 497 GACCTGGCGGTACAACGCGCCGTCCATCGAGGGCACCCGGACCTTCCAGCAGTTCTGGAG 844 CACCGG---CACCTACAAGGGCACCGTCACCACCGACGGGGAACGTACGACATCTACGA CTGGACCAGGAACCCGCTCGAGTACTACATCGTCGAGAGCTGGGGCACCTACCGGCC 18.0%; Score 119.4; DB 18; Length 1375; 57.1%; Pred. No. 2.1e-25; ative 0; Mismatches 176; Indels 3; υ • Gaps 784 727 667 1,

밁

Search completed: October 20, 2003, 11:27:58 Job time: 262 secs

Ś

밁 ঠ 밁 হ S

밁

밁

ঠ

October 20, 2003, 10:40:37 ; Search time 2552 Seconds (without alignments) 10628.167 Million cell updates/sec OM nucleic - nucleic search, using sw model Run on:

US-09-909-207-1 663 1 CAAATCGTCACCGACAATTC......TAACTTTGGATAAAAACAAT 663 Perfect score:

IDENTITY NUC Gapoxt 1.0 Scoring table: Sequence:

2888711 segs, 20454813386 residues Searched:

Total number of hits satisfying chosen parameters: Minimum DB seq length: 0 Maximum DB seq length: 200000000

5777422

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

gb ba: *
gb in: *
gb om: *
gb ov: *

gb_ph: gb_ro: gb_ro: gb_ro: gb_ro: gb_un: gb_un: gb_un: em_bu: em_tun: em_tun: em_pat: em_pat: em_pat: em_to: em_to:

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

		di			SUMMARIES	
Result No.	Score	Query Match	Length	DB	ID	Description
-		18	1 4	1	5 4 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
10	500	9	600	9 4	77022	200
	v	8 6	v	9	AP193049	02000
. 4	663		663	w	AR193050	AR193050 Sequence
'n	· w	100.0	4	· w	A48225	~
v	663	80	4	9	A48226	ednence
7	9	8	4	9	AR193051	
σο	9	ë.	744	9	AR193052	Sequenc
6	9	8	1513	φ	A48231	A48231 Sequence 10
, 10	9	00	1513	9	A48232	A48232 Sequence 11
11	ø	9	1513		AR193055	AR193055 Sequence
12	99	ë.	1513		AR193056	AR193056 Sequence
13		'n	744		A68006	A68006 Sequence 1
14		95.7	744		AR163110	AR163110 Sequence
15		4.	744		A45313	A45313 Sequence 18
16		4	744		AR117325	AR117325 Sequence
17		Ġ	744	9	A68016	A68016 Sequence 11
18		76.6	744	9	AR163117	AR163117 Sequence
19		ë.	1531	7	BSXYNY	X59059 Bacillus sp
20			2246	ч	AB029319	AB029319 Bacillus
21	280.4	42.3	1454	Н	CLOXYNB	M31726 Clostridium
22			4128	٦	AF047761	AF047761 Clostridi
23			5774	-	AB010958	AB010958 Clostridi
24			3493	-	CST508403	AJS08403 Clostridi
25	268.2		1070	ч	BPXYNA	X00660 Bacillus pu
26	-		101	ч	AF490981	AF490981 Bacillus
27	258.6		1789	٦	AF326785	AF326785 Bacillus
28	255.4	38.5	2364	Н	CLOXYNA	D13325 Clostridium
29			2364	Q	AR203507	equenc
30			1022	9	A42251	uence 1
31			1022	ø	A42285	A42285 Sequence 35
32			1022	9	AR127019	AR127019 Sequence
33		•	1022	9	AR127049	AR127049 Sequence
34			1022	9	AR220023	AR220023 Sequence
32	-		1022	9	AR220053	
36			1022	9	AR221306	AR221306 Sequence
37			1022	9	AR221336	Sequenc
38	S		909	ø	A42276	Sequence
39	255		600	9	A42284	Š
40	S		600	9	AR127041	ä
41	S	38.5	600	φ	AR127048	7048
42	S		0	9	2004	20045
43	S		600	9	2005	20052
44	S		900	9	AR221328	21328
45	S		0	9	2133	1335

Sequence 1 from Patent (BP0698667, A48222.1 GI:2302069 unidentified unidentified unclassified RESULT 1
A4822
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE ORGANISM REFERENCE AUTHORS TITLE

PAT 07-MAR-1997

linear

DNA

ALIGNMENTS

To (bases 1 to 663)
De, B.E., Lahaye, A., Ledoux, P. and Detroz, R.
Xylanase, microorganisms for its production, DNA molecules, process of preparation and use thereof
Patent: EP 0698667-A 1 28-FEB-1996; JOURNAL

process

```
RESULT
A48223
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                      ঠ
                                                                                                                                        밁
                                                                                                                                                                á
                                                                                                                                                                                            밁
                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                  661
                                                                                                           661
                                                                                                                                         601
                                                                                                                                                                                             541
                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                   109
                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOLVAY (BE)
Other publication B
Other publication B
Other publication B
Other publication G
Other publication F
Other publication C
Other publication C
A48223
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            663;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTTGGAAA
                                                                                                            Ą
                                                                                                                                                                                                                CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                     AACCACTTTAGAGCGTGGGAAAACTTTAGGGGATGAATATGGGGAAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                          TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACAATGTTAACAACATATTATTCCGTAAAAGGTAAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                  ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
                                                                                                                                                                                               CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                            TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                 ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                 ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                      TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAACAAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                                                                                                                      AACCACTTTAGAGCGTGGGAAAACTTAGGGGATGAATATGGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                              663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ublication BE 1008751 960702
ubblication BE 1008570 960604
ubblication BR 9503454 960305
ublication JP 8092284 960409
ublication FI 953578 960127
ublication AU 2508695 960208.
Location/Qualifiers
N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
 Patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 663; DB 6; 1
Pred. No. 1.5e-169;
; Mismatches 0;
 663 bp
EP0698667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                166
               DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       663;
               PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ٥,
               07-MAR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                         600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                     660
                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                               600
                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6
                                                                                                                                           660
                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                          밁
                                                 5
                                                                                  문
                                                                                                      δ
                                                                                                                                        밁
                                                                                                                                                               ð
                                                                                                                                                                                               밁
                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Sim
Matches 663;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      De, B.E., Lahaye A., Ledoux, P. and Detroz, R.

Xylanase, microorganisms for its production, DN
of preparation and use thereof
Patent: EP 069867-A 2 28-FEB-1996;
SOLVAY (BE)
Other publication BE 1008751 960702
Other publication BE 1008570 960604
Other publication BE 9503454 960305
Other publication JP 8092284 960305
Other publication FI 953578 960127
Other publication FI 953578 960127
Other publication AU 2508695 960208.

Location/Qualifiers
                           361
                                                       361
                                                                                  301
                                                                                                           301
                                                                                                                                        241
                                                                                                                                                                   241
                                                                                                                                                                                               181
 421
                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A48223
A48223.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unidentified unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                             GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTTGGAAA
                          ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                           ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                      TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                   TATTTATGCGTCTATGGTTGGACTGTTGACCCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                          GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                CAMATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                             AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAAATTCAATGAAACACAAAACACAC
                                                                                  TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 663)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           220
                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ည
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .663
/product="unnamed"
131 c 146 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              / tränel et i on="Olvtdnsignhogydyepwkdsggsgtmilnhggtpsaqmnnn
Nilferkgkkpnetgthogydgnnsilnydanegpngna ilcvygmydplybyj i vdswg
Nilferkgkkpnetgttydggtydiyetlavndpsikglapekgybysvrskakatsgtisse
Niferamenlgmnmgkmyevaltvegydssgsanvysntlringnplstisndesitld
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="unnamed protein product; Protein sequence
conflict with the conceptual translation"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
/protein_id="CAA03091.1"
/db_xref="GI:2302071"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="unidentified"
/mol_type="genomic DNA"
/db_xref="taxon:32644"
L. _663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GI:2302070
                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                    Score 663; DB 6;
Pred. No. 1.5e-169;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          166
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 663;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 molecules,
```

٥,

Gaps

60

300

240 240 180 180 120 120

360

360 300

480 420 420 18

ij

Qy 421 TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC 480 Db 421 TTTAAACAATATTGGAGTTTCGAAGATCGAAACGCACGAGTGCCACGATTTCTGTCAGC 480 Qy 481 AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAGTCGCG 540 Db 481 AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG 540 Qy 541 CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATGAAGTCGCG 540 Db 541 CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATGCAATACACTAAGA 600 Qy 601 ATTAACGGTATCCAACTATTAGTAATGTAATGTATTAGCAATACACTAAGA 600 Db 601 ATTAACGGTAACCCTCTCTCAACTATTAGTAATGAGAGAGA	RESULT 4 AR193050 LOCUS LOCUS DEFINITION Sequence 2 from patent US 6346407. ACCESSION AR193050 VERGION VERGION VERGION AR193050.1 GI:20239015 KEYMORDS SOURCE Unknown. ORGANISM Unknown. AUTHORS A	Dolo
	RESULT 3 AR193049 LOCUS BAR193049 LOCUS AR193049 LOCUS BEFINITION Sequence 1 from patent US 6346407. AR193049 VERSION REYMORDS SOURCE ONGANISM Unclassified. Unclassified. Unclassified. AUTHORS Unclassified. LOCATION REFERENCE ONGANISM Unclassified. LOCATION AUTHORS LOCATION AND MANUAL FEATURES JOURNAL FEATURES LOCATION AND MANUAL FEATURES JOURNAL FEATURES LOCATION AND MANUAL FEATURES LOCATION Qualifiers LOCATION AND MANUAL FEATURES LOCATION AND M	Query Match 100.0%; Score 663; DB 6; Length 663; Best Local Similarity 100.0%; Pred. No. 1.5e-169; 0; Gaps 0; Matches 663; Conservative 0; Mismatches 0; Indels 0; Gaps 0; QY 1 CAAATGCGCACCACTACGCAACCACGATGGCTACATTATTATATATTATGAAA 60 61 GATAGCGGTGGCTTGGGACAATCCATTCCAATCATGGGGGTACGTTCAGTGCCCAATGG 120 QY 61 GATAGCGGTGGCTTGGGACAATGCTTCAATCATGGGGGTACGTTCAGTGCCCAATGG 120 61 GATAGCGGTGGCTTGGGACAATGATTATTCCGTAAAGGTACATTCAATGATGACGTGCCCAATGG 120 QY 121 AACAATGTTAACACATATTATTCCGTAAAGGTAAAAATTCAATGAAACACAACCACTTCAATGATGAACACACTAGGGGCCAACTTCCAACCAA

300

381

```
RESULT 5
A48225
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                         BASE CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
               밁
                                  5
                                                                    밁
                                                                                       ş
                                                                                                                  문
                                                                                                                                              ઇ
                                                                                                                                                                              밁
                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                           FEATURES
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                      COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                 262
                                         181
                                                                    202
                                                                                               121
                                                                                                                          142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                   SOLVAY (BE)
Other publication B
Other publication B
Other publication B
Other publication T
Other publication C
Other publication C
                                                                                                                                                    61
                                                                                                                                                                               82
                                                                                                                                                                                                                                      663;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                l (bases 1 to 744)
De, B. E., Lahaye, A., Ledoux, P. and Detroz, R.
Xylanase, microorganisms for its production,
of preparation and use thereof
Patent: EP 0698667-A 4 28-FEB-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 4 from Patent
A48225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A48225.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A48225
                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                   CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTAAACAATATTGGAGTGTTCGAAGATCGAAAACGCACGAGTGGCACGATTTCTGTCAGC
                              GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCCAATGG
                                                                                                                                          GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACCACTTTAGAGCGTGGGAAAACTTAGGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                 AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAAATTCAATGAAACACAAAACACAC
                                                                                    AAT 663
                                                                                                                                                                                                                                                                                                       246
                                                                                                                                                                                                                                    100.0%;
ilarity 100.0%;
Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              663
                                                                                                                                                                                                                                                                                                       ည
                                                                                                                                                                                                                                                                                                                                                                     iblication BE 1008751 960702 bblication BE 1008570 960604 bblication BR 9503454 960305 bblication JP 8092284 960409 bblication FI 953578 960127 bblication AU 2508695 960208 Location/Qualifiers
                                                                                                                                                                                                                                                                                                     GI:2302072
                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                    Score 663; DB 6;
Pred. No. 1.5e-169;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    744 bp
EP0698667.
                                                                                                                                                                                                                                                                                                         194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
                                                                                                                                                                                                                                                              Length 744;
                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              molecules,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PAT
                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    07-MAR-1997
                                                                                                                                                                                 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                 321
                                                                       261
                                                                                               180
                                                                                                                          201
                                                                                                                                                      120
                                                                                                                                                                                                            60
                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
A48226
                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                               JOURNAL
sig_peptide
mat_peptide
                                                                                                                                                    Sg
                                                                                                                                                                                                          source
                                                                                                                                                                                                                    De,B.E., Lahaye,A., Ledoux,P. and Detroz,R.
Xylanase, microorganisms for its production, of preparation and use thereof
Patent: EP 069867-A 5 28-FEB-1996;
SOLVAY (BE)
Other publication BE 1008751 960702
Other publication BE 1008570 960604
Other publication BE 9503434 960305
Other publication BR 9503489 960127
Other publication CA 2154628 960127
Other publication AU 2508695 960208.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                   unidentified unidentified unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A48226
Sequence
A48226
A48226.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTTATATTTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGAGCATAACTTTTGGATAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTAAACAATATTTGGAGTGTTCGAAGATCGAAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 744)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           663
                                         /codon_start=1
/proteIn_id="CAA03092.1"
/proteIn_id="CAA03092.1"
/db_xref="G1:2302074"
/db_xref="G1:2302074"
/translation="MRQKKLTLILAFLVCFALTLPAEIIQAQIVTDNSIGNHDGYDYE
/translation="MRQKKLTLILAFLVCFALTLPAEIIQAQIVTDNSIGNHDGYDYE
FWKDSGGSGTMILNHGGTFSAQWNNVNNILFRKGKKFMETQTHQGYGNNSINYGANFQ
PNGNAYLCVYGWTUPDLYEYYIVDSWCNWRPFGATPKCTITVDGGTYDIYETLHVNQF
SIKGIATFKQYWSVRRSKRTSGTISVSNHFRAWENLGMNMGKMYEVALTVEGYQSSGS
  ANVYSNTLRINGNPLSTISNDESITLDKNN"
1. .81
82. .744
                                                                                                                                                                /organism="unidentified"
/mol_type="genomic DNA"
/db_xref="taxon:32644"
                                                                                                                                       note="unnamed protein product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   744 bp
EP0698667.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                           DNA molecules,
```

PAT 07-MAR-1997

660 681 600

741

540 561 480 501 420 441 360

ö

141 120 201 180 261 240 321 300 381 360 441 420 501 480 561 540 621 600

9

```
20-APR-2002
                                                                                                     GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                       TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATTGTCGACAGT
                                                                                                                                                                                                                                                                           TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                     382 TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                              ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                       TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGGGGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGGAAA
                                                                                                                                     GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                             AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                                                                                                                                                                        TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAAGGGGACCATCATTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                   ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                          TTTAAACAATATTGGAGTGTTGGAAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 744)
De Buyl, E., Lahaye, A., Ledoux, P. and Detroz, R.
Xylanase, microorganisms producing it, DNA molecules, methods
preparing this xylanase and uses of the latter
Patent: US 6346407-A 5 12-FBB-2002;
                                                                       Gapa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PAT
                                                                      ;
                                                   Length 744;
                                                                      Indels
                                                 ; Score 663; DB 6; I; Pred. No. 1.5e-169; 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA
                    194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 5 from patent US 6346407.
AR193052
AR193052.1 GI:20239017
       /organism="unknown"
144 c 160 g
                                                 Query Match
Best Local Similarity 100.0%;
Matches 663; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unclassified.
                   ัซ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAT 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAT 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AR193052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unknown
                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                        301
                                                                                            ٦
                                                                                                                82
                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                    61
                                                                                                                                                       142
                                                                                                                                                                                                202
                                                                                                                                                                                                                                          262
                                                                                                                                                                                                                                                                                   322
                                                                                                                                                                                                                                                                                                                                                                      442
                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 8
AR193052
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
 source
                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                  g
                                                                                                           셤
                                                                                                                                                                                            8 8
                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                            ઠે
                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ્ જે
                                                             .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20-APR-2002
                                                                                                                          120
                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   900
                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                     141
                                                                                                                                            201
                                                                                                                                                                                                                               321
                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                         381
                                                                                                                                                                                                                                                                                                                   441
                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                     561
                                                                                                                                                                                                                                                                                                                                                                                                                                             621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        681
                                                                                                                                                                                      261
                                                                                                                                                                                                                                                                                                                                                            501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 (bases 1 to 744)
De Buyl, E., Lahaye, A., Ledoux, P. and Detroz, R.
De Buyl, E., Lahaye, A., Ledoux, P. and Detroz, R.
De Buyl, E., Lahaye, A., Ledoux, P. and Detroz, R.

pylanase, microorganisms producing it, DNA molecules, methods for preparing this xylanase and uses of the latter
Patent: US 6346407-A 4 12-FEB-2002;
Location/Qualifiers
                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                 TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                             TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                        TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGGGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                          AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAGGTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                        AACCACTTTAGAGGGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                         GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                      ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                    ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGTTGCCACA
                                                           Gaps
                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PAT
                                        Length 744;
                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                      atch
100.0%; Score 663; DB 6; I
cal Similarity 100.0%; Pred. No. 1.5e-169;
.663; Conservative 0; Mismatches 0;
         ı
         194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AR193051 744 bp
Sequence 4 from patent US 6346407.
AR193051.1 GI:20239016
         þ
/product="unnamed"
         160
        144 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown.
Unclassified.
         ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ||||
AAT 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unknown.
        246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAT
                                      Query Match
Best Local S:
Matches ,663,
                                                                                Н
                                                                                                    82
                                                                                                                                            142
                                                                                                                                                                                     202
                                                                                                                                                                                                                               262
                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                             562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               682
                                                                                                                       61
                                                                                                                                                                 121
                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                        322
                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                382
                                                                                                                                                                                                                                                                                                                                                          442
                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                    502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       622
                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 7
AR193051
LOCUS
DEFINITION
ACCESSION
KEYWORDS
SOURCE
       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
FEATURES
                                                                                                                                      g
                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                    음 참
                                                                                                                                                                                                                                                                                                                                                                                               염 &
                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                ઠે
                                                                                                   셤
                                                                                                                     ઠે
                                                                                                                                                               8 8
                                                                                                                                                                                                 ठे
                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
```

9 741

for

```
A48231
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                 5 B 5
                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ક
                                                                                                                                                          밁
                                                                                                                                                                         ঠ
                                                                                                                                                                                        밁
                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                           용
                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  663;
                                                                                                                                                                                                                 109
                                                                                                                                                          742
                                                                                                                                                                            661
                                                                                                                                                                                                682
                                                                                                                                                                                                                                      622
                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                           562
                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                 502
                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                       442
                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                            382
                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                  322
                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                             A48231
Sequence 10:
A48231
A48231.1 GI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              μ
unclassified.

1 (bases 1 to 1513)

1 (bases 1 to 1513)

De B.E., Lahaye, A., Ledoux, P. and Detroz, R. xylanase, microorganisms for its production, of preparation and use thereof
                                                   unidentified
                                                           unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACAATGTTAACAACATATTATTCCGTAAAAGATATAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                            Ž
                                                                                                                                                                                                                                                                            AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                     AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                 TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                         ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                  ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                             TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                        TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                  TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                             TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                          AAT 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
ilarity 100.0%;
Conservative (
                                                                                                                                                                             663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="unknown"
144 c 160 g
                                                                               GI:2302078
                                                                                                 from
                                                                                                  Patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 663; DB 6; 1
Pred. No. 1.5e-169;
; Mismatches 0;
                                                                                                 1513 bp
EP0698667.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 194
                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                           linear
             DNA molecules,
                                                                                                           PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                           07-MAR-1997
             ргосевв
                                                                                                                                                                                                                                                         600
                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            141
                                                                                                                                                                                                                                      681
                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                         501
                                                                                                                                                                                                                                                                                                                                                                                             441
                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                   381
                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                  741
                                                                                                                                                                                                                    660
                                                                                                                                                                                                                                                                                                                  561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      201
                                                                                                                                                                                                                                                                             621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            、·
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
    RESULT
A48232
LOCUS
                                                              S
                                                                                    밁
                                                                                                       S
                                                                                                                             멍
                                                                                                                                            ঠ
                                                                                                                                                                    밁
                                                                                                                                                                                    Ś
                                                                                                                                                                                                           문
                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 663; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                      10
                                                                                                                                                                                                           1121
                                                                                        1301
                                                                                                                                                                     1181
                                                                                                                                                                                                                                                1061
                                                                                                                                                                                                                                                                                      1001
                                                   1361
                                                                                                                              1241
                                                                                                                                                                                       481
                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                         301
                                                                      199
                                                                                                           601
                                                                                                                                                 541
                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                            941
                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                   188
                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                         821
                                                                                                                                                                                                                                                                                                                                                                                                                                              761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    701
                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Patent: EP
SOLVAY (BE)
Other public
Other public
Other public
Other public
Other public
Other public
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ب
     A48232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Other
                                                                                                                                                                                                                                                                                                                                                                                                      GATAGCGGTCGCCTCTCGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTTGGAAA
                                                                                                                                                                   TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                               TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                             GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                           CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                            ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                      TATTTATGCGTCTATGGATTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                   Ä
                                                                                         ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
                                                                                                    ATTAACGGTAACCCTCTCAACTATTAGTAATGACGAGAGACATAACTTTGGATAAAAAC
                                                                                                                                                                                                                                                ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                      TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                            TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                   AAT 1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      er publication BE 1008751 960702 er publication BE 1008570 960604 er publication BE 9503454 960305 er publication DP 8092284 960409 er publication FI 953578 960127 er publication CA 2154628 960127 er publication AU 2508695 960208.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                       663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        / ...1513
/organism="unidentified"
/mol_type="genomic DNA"
/db_xref="taxon:32644"
a __282 c __271 g __460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0698667-A 10 28-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 663; DB 6;
Pred. No. 1.4e-169;
); Mismatches 0;
     1513
    ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          460
     DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1513;
     linear
    PAT 07-MAR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gape
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   760
                                                                                          1360
                                                                                                                              1300
                                                                                                                                                  600
                                                                                                                                                                    1240
                                                                                                                                                                                       540
                                                                                                                                                                                                          1180
                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                1120
                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                      1060
                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                            1000
                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6
                                                                                                           660
                                                                                                                                                                                                                                                                                                                                                                   940
                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                         880
                                                                                                                                                                                                                                                                                                                                                                                                                                              820
```

us-09-909-207-1.rge

```
TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="unknown"
282 c 271 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    271 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                            .1513
                                                                                                                                                                                                                                                                                                                                                             Unknown.
Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
Matches 663; Conserv
                                                                                                                                                                                                                          AAT 1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    500 a
                                                                                                                                                                                                   663
                                                                                                                                                                                                                                                                                                                                                Unknown.
                                                                                                                                                                                                     AAT
       421
                                                                                                                                                   601
                                                                                                                                                                                                                          1361
                                                                                                     541
                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                             RESULT 11
AR193055
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                         g
                                                                        g
                                                                                                                          g
                                                                                                                                                                        셤
                                                                                                                                                                                                                        a
                                                     ò
                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                   à
                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                    E 1 (bases 1 to 1513)
S De, B.E., Lahaye, A., Ledoux, P. and Detroz, R.
Xylanase, microorganisms for its production, DNA molecules, process of preparation and use thereof
L Patent: EP 0698667-A 11 28-FEB-1996;
SOLVAY (BE)
Other publication BE 1008751 960604
Other publication BE 1008750 960604
Other publication BR 9503454 960305
Other publication FI 953578 960127
Other publication AP 8092284 960107
Other publication AD 2508695 960208.
                                                                                                                                                                                                                                                                                                                                          /pocedin id="CAA03094.1"
//brotein id="CAA03094.1"
//db_xref="G1:2302080"
//db_xref="G1:2302080"
//translation="MRQKKLTLILAFLVCFALTLPAEIIQAQIVTDNSIGNHDGYDYE
FWADSGGSGGMILNHGGTFSAQWNNVNNILFRKGKKFNETQTHQQVGNMSINYGANFQ
PNGNATLCYCWTVDDFLVBYYIVDSWGNWFPPGATPKGTTITVDGGTYDIYETLRVNQF
SIKGIATFKQYMSVRRSKRTSGTISVSNHFRAMENLGMNMGKNYEVALTVEGYQSSGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1061 ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA 1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACAATGTTAACAACATATTTCCGTAAAGGTAAAAATTCCAATGAAACACAAACACAC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATAGCGGTGGCTCTGGGGACAATGATTCTCAATCATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAAATTCAATGAAACACAAACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATITIATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           941 TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1513;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 663; DB 6; I
100.0%; Pred. No. 1.4e-169;
                                                                                                                                                                                                                                                                                                        320. 1366
note="unnamed protein product"
                                                                                                                                                                                                                                                                                                                                                                                                                      ANVYSNTLRINGNPLSTISNDESITLDKNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      460
Sequence 11 from Patent EP0698667.
A48232
                                                                                                                                                                                                                                                          1. .1513
/organism="unidentified"
/mol_type="genomic DNA"
/db_xref="taxon:32644"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="unnamed"
282 c 271 g
                                                                                                                                                                                                                                                                                                                                   codon_start=1
                             A48232.1 GI:2302079
                                                                                                                                                                                                                                                                                                                                                                                                                                              .1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 663; Conservative
                                                 unidentified
unidentified
unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      200
                                                                                                                                                                                                                                                                                                                                                                                                                                   sig_peptide
mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                             source
   DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNT
                                                               ORGANISM
                                                                                    REFERENCE
AUTHORS
TITLE
                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE CC
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        윱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
```

```
1240
                                                                                                                                                                                                                        1300
                                                                                                                                                                                                                                                                                         1301 ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAAACTTTGGATAAAAAC 1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PAT 20-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1001 TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA 1060
                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
480
                                                                                                                                                                            900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 1513)
De Buyl, E., Lahaye, A., Ledoux, P. and Detroz, R.
Xylanase, microorganisms producing it, DNA molecules, methods for preparing this xylanase and uses of the latter
Patent: US 6346407-A 10 12-PEB-2002;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                  ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
                         1121 TITAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGGGCGCACGATTTCTGTCAGC
                                                                                      481 AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                      1241 CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATAGCGGTGCCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATCATGGCGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             941 TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                            CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    821 AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361 ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gape
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1513;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 663; DB 6; I 100.0%; Pred. No. 1.4e-169;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 10 from patent US 6346407.
AR193055
AR193055.1 GI:20239020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
```

```
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 12
AR193056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
           δ
                                  밁
                                                 Ş
                                                                       밁
                                                                                                ঠ
                                                                                                                          밁
                                                                                                                                          S
                                                                                                                                                                      밁
                                                                                                                                                                                          र्
                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                    श
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                     PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Snoor
                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                          Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1361
                                   1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
             361
                                                       301
                                                                              941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                    241
                                                                                                                           881
                                                                                                                                                  181
                                                                                                                                                                       821
                                                                                                                                                                                             121
                                                                                                                                                                                                                    761
                                                                                                                                                                                                                                                                 701
                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                             663;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AR193056
Sequence 11
AR193056
AR193056.1
                                                                                                                                                                                                                                                                                        μ
                                                                                                                                                                                                                                                                                                                                                                                                              1 (bases 1 to 1513)
De Buyl, E., Lahaye, A., Ledoux, P. and Detroz, R.
Xylanase, microorganisms producing it, DNA molecules,
preparing this xylanase and uses of the latter
Patent: US 6346407-A 11 12-FEB-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unclassified
                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                               CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTTGGAAA
ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                           TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                       AACAATGTTAACAACATATTATTCCGTAAAAGGTAAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                                                                                      GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                   GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACCACTTTAGAGCGTGGGAAAACTTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTAAACAATATTGGAGTGTTCGAAGATCGAAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                               TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                            AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTAACGGTAACCCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAT 1363
                                                                                                                                                                                                                                                                                                                                                                     500
                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   663
                                                                                                                                                                                                                                                                                                                                                                     ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11
                                                                                                                                                                                                                                                                                                                                                                                           1. .1513
                                                                                                                                                                                                                                                                                                                                                                   /organism="unknown"
282 c 271 g
                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from
                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          patent
                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                            Score 663; DB 6; I
Pred. No. 1.4e-169;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1513
US 6:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6346407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      đđ
                                                                                                                                                                                                                                                                                                                                                                      460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                  Length 1513;
                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PAT
                                                                                                                                                                                                                                                                                                              <u>..</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                       methods
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20-APR-2002
                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1240
                                                                                1000
                                                                                                                                                                                                                                                                 760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
               420
                                                          360
                                                                                                       300
                                                                                                                             940
                                                                                                                                                   240
                                                                                                                                                                        880
                                                                                                                                                                                                180
                                                                                                                                                                                                                      820
                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                         60
                                     1060
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
A68006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                      ঠ
                                                        밁
                                                                               S
                                                                                                               뫄
 밁
                                                                                                                                          ঠ
                                                                                                                                                                                                                                                  BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Locus
                                                                                                                                                                         Query Match
Best Local S
Matches 645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13
                                                                                                                                                                         / Match 95.7%;
Local Similarity 97.3%;
nes 645; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1061 ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
 202
                            121
                                                                                     5
                                                                                                                  82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
A68006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 744)
Dalboege, H., Diderichsen, B., Sandal, T. (METHOD OF PROVIDING NOVEL DNA SEQUENCES Patent: WO 9743409-A 1 20-NOV-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A68006.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NOVONORDISK AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _AAT
                   GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                    CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                        GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                  CAPATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
MACAATGTTAACAACATATTATTCCGTAAAGGTAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
                                                                                                                                                                                                                                                   249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1363
                                                                                                                                                                                                                                                   ø
                                                                                                                                                                                                                                                             /codon_start=1/
/proteIn_id="Chaf2305.1"
/proteIn_id="Chaf2305.1"
/db_xref="cli:4756811"
/translation="mRQKKLTFILAFLVCFALTLPABIIQAQIVTDNSIGNHDGYDYE
/translation="mRQKKLTFILAFLVCFALTLPABIIQAQIVTDNSIGNHDGYDYE
FWKDSGGSGTMILNHGGTFSAQWNNVNNILFRKGKKFMETQTPGQVGNNSINYAANFQ
PNGNAYLCVYGWTVDFLVEYYIVDSWGNWRPPGATPKGTITVDGGTYDIYETLRVNQP
SIKGIAFFKQYMSVRSKRTSGTISVSNHFRAMENLGWNMGKMYEVALTVEGYQSSGS
ANVYSNTLRINGNPLSTISNDKSITLDKNN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 from
                                                                                                                                                                                                                                                                                                                                                                                                         /organism="unidentified"
/mol_type="genomic DNA"
/strain="BACILLUS SP. AC13,
/db_xref="taxon:32644"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                  note="unnamed protein product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:4756810
                                                                                                                                                                                                                                                   146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (DK)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              744 bp
Patent W09743409
                                                                                                                                                                                                                                                  a
                                                                                                                                                                         Score 634.2; DB Pred. No. 1e-161; 0; Mismatches 1
                                                                                                                                                                                                                                                157 g
                                                                                                                                                                                                                                                   192· t
                                                                                                                                                                                                   DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                             NCIMB
                                                                                                                                                                            18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                             Ö.
                                                                                                                                                                            Indels
                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kauppinen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                              40482"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PAT 05-MAY-1999
                                                                                                                                                                          0
                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1180
                                                                                                                  141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1240
                            180
                                                                                                                                               6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
 261
                                                        201
                                                                                   120
                                                                                                                                                                            0
```

g

ઠ 셤 ઠે 요 ò a ò 8 ઠે g ઠે 임 ò 셤 ઠે

ઠે

```
E (Dases 1 to 744)

S Van,S.P., Williams,D.P., Iverson,S., Farrell,R.L., Herbes,W.T., Van,D.K., Herweijer,M.A., Van,B.R., Quax,W.J., Goedegebuur,F. and Jones, B.E.

ALKALI-TOLERANT XYLANASES

ALKALI-TOLERANT XYLANASES

L Patent: WO 9518219-A 18 06-JUL-1995;
GIST BROCADES IN (NL)

GIST BROCADES IN (NL)

Cher publication JP 8507221 960806

Other publication NO 953312 951019

Other publication RI 953920 950821

Other publication RI 953920 950821

Other publication RI 1953920 950821

Other publication AU 1415095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAT 07-MAR-1997
                                                                                                                                                                                                              420
                                                          321
                                                                                     300
                                                                                                                     381
                                                                                                                                                  TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA 360
                                                                                                                                                                                 441
                                                                                                                                                                                                                                           501
                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                       561
                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                   621
                                                                                                                                                                                                                                                                                                                                                                                                  909
                                                                                                                                                                                                                                                                                                                                                                                                                     202 AACAATGTTAACAACATATTATTCGGTAAAGGTAAAAATTCAATGAAACACAACACAC 261
                                            322 TATTTATGCGTCTATGGTTGGACTGTTGACCCCTCTTGTCGAATATTATATTGTCGATAGT
                                                                                                                                                                      ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                               442 ACATATGATATCTATGAAACTCTTAGAGTCAATCAGCCCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                          502 TITAAACAATATIGGAGIGICCGAAGAICGAAACGCACGAGIGGCACAATITITIGIC
                                                                                                                                                                                                                                                                                                                                                                   562 AACCACTTTAGAGGGTGGGAAAACTTAGGGATGAACATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                       TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                          TITAAACAATATIGGAGIGITCGAAGATCGAAACGCACGAGIGGCACGATITCIGICAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 18 from Patent W09518219. A45313.1 GI:2299796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
/product="XYLANASE"
/protein_id="CAA02821.1"
/db_xref="GI:2299797"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .744
/organism="unidentified"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /mol_type="genomic DNA"
/strain="1-43-3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:32644"
1. .744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                isolate="CBS672.93"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unidentified
unidentified
unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAT 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAT 744
                                                                                       241
                                                                                                                                                                                                              361
                                                                                                                                                  301
                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
A45313
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                    g
                                                                                                                g
                                                                                                                                                                        셤
                                                                                                                                                                                                    ਨੇ
                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                      ઠે
                                                                             ઠે
                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                              ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PAT 17-OCT-2001
                                                          300
                                                                                     381
                                                                                                                                                                                420
                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                         561
                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                     621
                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unknown.

Unclassified.

(Dases 1 to 744)

Dalb.o slashed.ge,H., Sandal,T., Kauppinen,M.Sakari. and
Diderichsen, Balashedrge.
Method of providing a hybrid polypeptide exhibiting an activity of interest
240
                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                             ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAPATICETCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA 141
                                                                                                                                                  441
                                                                                                                                                                                                            501
                                                                                                                                                                                                                                                                                                                                                                                                681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACAATGTTAACAACATATTATTCCGTAAAAGGTAAAAATTCAATGAAACACAAACACA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                         TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGGTAGT
                                                                                                                                   382 TGGGGCAACTGGCGTCCACCAGGGGCAACGCCTAAGGGAACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                 ACATATGATATCTATGAAACTCTTAGAGTCAATCAGCCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                                          TITAAACAATATITGGAGTGTCCGAAGATCGAACGCACGAGGTGGCACAATTICTGTCAGC
                                                                                                                                                                                                                                                                                                                        CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                   CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                           CAACAAGTTGGTAACATGTCCATAAACTATGGCGCAAACTTCCAGCCAAACGGAAATGCG
                                                         TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                   TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                           TITIAAACAATATIGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                       AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 744;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IndelB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 634.2; DB 6;
Pred. No. 1e-161;
0; Mismatches 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent: US 6270968-A 1 07-AUG-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AR163110 744 bp
Seguence 1 from patent US 6270968.
AR163110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             organism="unknown"
146 c 157 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AR163110.1 GI:16233600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 97.3%;
Matches 645; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              249 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAT 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAT 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                         241
                                                                                     322
                                                                                                                   301
                                                                                                                                                                              361
                                                                                                                                                                                                            442
                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                       502
                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                    562
                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                              622
                                                                                                                                                                                                                                                                                                                                                                                                                              109
                                                                                                                                                                                                                                                                                                                                                                                                                                                           682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ARIGILO
LOCUS
DEFINITION
ACCESSION
VERSION
VERSION
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
```

a ò 유 ઠે

/tranblation="msqkkltlinleslfaltlparisoaqiytdnsiatrggydyef wkdsggsgtmilnhggtfsaqwnnnnnilfrkgkkfnetqthqqygnmsinyganfqp ngnaylcvygwtydplybyyiydswgmbpgatpkgtitvdggtydiyetlrvnqps

	Db 739 AAT 741 Search completed: October 20, 2003, 11:23:26 Job time : 2555 secs
	Qy 661 AAT 663 .
660 738	Qy 601 ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
600 678	Qy 541 CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
540 618	Qy 481 AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
480 558	Oy 421 TTTANACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
420 498	Oy 361 ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
360 438	OY 301 TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
300 378	Qy 241 TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
318	Qy 181 CAACAAGTTGGTAACATGTCCATAAACTACGGAGCCAACTTCCAACCAA
180	Qy 121 AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAAATTCAATGAAACACAAACACAC
120 198	Oy 61 GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
138	Oy 1 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
0;	Query Match 94.2%; Score 624.6; DB 6; Length 744; Best Local Similarity 96.4%; Pred. No. 4.2e-159; Matches 639; Conservative 0; Mismatches 24; Indels 0; Gaps
NQPS SGSA	NGNAYLCVYGWTVDFLYBYYLDSWGNWRFPGATFKGTITVDGGTYDIYETLRVNQPS IKGIATFKQYWSVRRSKRTSGTISVSNHFRAWENLGMNMGKMYEVALTVEGYQSSGSA NVYSNTLRINGHLSTISNNESITLDKUN" BASE COUNT 248 a 145 c 159 g 192 t

us-09-909-207-1.rnpb

```
October 20, 2003, 11:28:06; Search time 1595 Seconds (without alignments) 1091.613 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                           US-09-909-207-1
663
1 CAAATCGTCACCGACAATTC......TAACTTTGGATAAAAACAAT 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Published Applications NA:*

1: /cgn2_6/ptodata/2/pubpna/US07_PUBCOMB.seq:*
2: /cgn2_6/ptodata/2/pubpna/PCT_MEW_PUB.seq:*
2: /cgn2_6/ptodata/2/pubpna/PCT_MEW_PUB.seq:*
4: /cgn2_6/ptodata/2/pubpna/US06_NEW_PUB.seq:*
5: /cgn2_6/ptodata/2/pubpna/US06_NEW_PUB.seq:*
6: /cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
7: /cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
6: /cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
9: /cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
9: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
10: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*
12: /cgn2_6/ptodata/2/pubpna/US09_NEW_PUB.seq:*
13: /cgn2_6/ptodata/2/pubpna/US10A_PUBCOMB.seq:*
14: /cgn2_6/ptodata/2/pubpna/US10A_PUBCOMB.seq:*
15: /cgn2_6/ptodata/2/pubpna/US10A_PUBCOMB.seq:*
16: /cgn2_6/ptodata/2/pubpna/US10A_PUBCOMB.seq:*
16: /cgn2_6/ptodata/2/pubpna/US10A_PUBCOMB.seq:*
17: /cgn2_6/ptodata/2/pubpna/US10A_PUBCOMB.seq:*
16: /cgn2_6/ptodata/2/pubpna/US60_PUBCOMB.seq:*
17: /cgn2_6/ptodata/2/pubpna/US60_PUBCOMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3500406
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1750203 seqs, 1313063994 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                               OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IDENTITY NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                      Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database :
                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Searched:
                                                                                                                                                                                                           Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	Sequence 1, Appli	~	Sequence 4, Appli	S,	Sequence 10, Appl	Sequence 11, Appl	Sequence 1, Appli	Sequence 1, Appli	Sequence 39, Appl	Sequence 71, Appl	Sequence 70, Appl	Sequence 68, Appl	Sequence 1, Appli	64,	Sequence 65, Appl	Sequence 67, Appl
. QI	US-09-909-207-1	US-09-909-207-2	US-09-909-207-4	US-09-909-207-5	US-09-909-207-10	US-09-909-207-11	US-09-770-621-1	US-10-286-993-1	US-10-307-441-39	US-10-213-990-71	US-10-213-990-70	US-10-213-990-68	US-10-299-393-1	US-10-213-990-64	US-10-213-990-65	US-10-213-990-67
08	12	10	10	10	10	10	0	12	12	14	14	14	14	14	14	14
% Query Match Length DB	663	663	744	744	1513	1513	1375	1375	296	942	1002	705	2898	712	999	739
* Query Match	100.0	100.0	100.0	100.0	100.0	100.0	18.0	18.0	17.4	16.8	16.6	16.4	16.0	15.8	15.6	14.6
Score	663	663	663	663	663	663	119.4	119.4	115.2	111.4	110	108.8	106	104.8	103.6	96.8
Result No.	1	8	m	4	'n	9	7	æ	თ	10	11	12	13	14	15	16

Sequence 3, Appli Sequence 10, Appl	11,	Seguence 8, Appli	Sequence 9, Appli	Sequence 1, Appli	S	Sequence 39, Appl	Seguence 24, Appl	Sequence 1, Appli	Sequence 793, App	Sequence 308, App	Sequence 13285, A	Sequence 2116, Ap	_	Sequence 2, Appli		Sequence 297516,	Sequence 170, App	Sequence 212128,	Seguence 9387, Ap	Sequence 1, Appli	Sequence 199892,	Sequence 199893,	Sequence 1872, Ap	Sequence 701, App	1405	Sequence 1, Appli	Seguence 2141, Ap
US-09-803-454-3 US-10-237-386-10	US-10-237-386-11	US-09-790-070A-8	US-10-237-386-9	US-09-467-368-1	US-10-419-969-5	US-10-340-860A-39	US-10-307-441-24	US-09-970-616-1	US-10-311-455-793	US-10-311-455-308	US-10-027-632-13285	US-10-311-455-2116	US-09-840-743-10		US-10-027-632-63151	US-10-027-632-297516	US-08-781-986A-170	US-10-027-632-212128	US-10-027-632-9387	US-09-792-616-1	US-10-027-632-199892	US-10-027-632-199893	US-10-311-455-1872	US-10-311-455-701	US-10-311-455-1405	US-10-312-841-1	US-10-311-455-2141
11	12	7	12	10	12	12	12	10	12	17	13	12	12	12	ដ	13	Ф	13	13	12	2	2	12	12	12	12	12
678 645	657	2225	588	983	2054	643	74	557	6123	10528	787	8622	8880	3673778	478	478	5333	623	980	107820	611	611	10832	14307	17527	3673778	5914
13.1 12.5	12.5	11.9	10.9	10.9	8.2	7.6	6.2	9	5.7	5.7	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.3	5.3	5.3	5.3	5.3	5.3	5.2	5.2	5.2	5.5
86.8 83.2	83.2	79	72.4	72.4	54.2	50.4	41	40	38	37.6	36	36	35.8	35.8	35.6	35.6	35.6	35.2	35.2	35.2	35	35	35	34.8	34.8	34.8	34.6
17	19	20	21	22	23	24	25	56	27	28	53	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	42
									υ	υ		υ	υ	υ	υ	υ		υ	υ	υ	υ	υ	υ	υ	υ	υ	υ

ALIGNMENTS

Sequence 1, Application US/09909207; Patent No. US20020115181A1; GENERAL INFORMATION:

US-09-909-207-1

RESULT 1

APPLICANT: ANDREE LAHAYE

ERIC DE BUYL PIERRE LEDOUX RENE DETROZ

TITLE OF INVENTION: Xylanase, microorganisms produced it,
DNA molecule, processes for preparation of this xylanase
and uses thereof

NUMBER OF SEQUENCES: 29
CORRESPONDENCE ADDRESS:
ADDRESSEE: WILLIAN BRINKS HOFER GILSON & LIONE
STREET: 2000 K St., N.W., Suite 200
CITY: Washington
STATE: D.C.

COUNTRY: U.S.A.

ZIP: 20006

COMPUTER READABLE FORM:
MEDLUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATE: US-J01-2001
FILING DATE: 19-J01-2001
CLASSIFICATION: «Unknown»

PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/470,953
FILING DATE: 06-JUNE-195
ATTORNEY/AGENT INPORMATION:
NAME: Willem F. Gadiano, Esq.
REGISTRATION NUMBER: 37,136
REFERENCE/DOCKET NUMBER: 4121-40
TELECOMMUNICATION INFORMATION:

TELEFAX: (202) 293-1850

TELEPHONE:

```
RESULT 2
US-09-909-207-2
            Sequence 2, Application US/09909207
Patent No. US20020115181A1
GENERAL INFORMATION:
APPLICANT: ANDREE LAHAYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 663;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 663 base pairs
TYPE: nucleic acid
STRANDENNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN: Bacillus
SEQUENCE DESCRIPTION: SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: 1: MOLECULE TYPE: DI ORIGINAL SOURCE:
                                                                                                                                                                                                                                                       541
                                                                                                                                  661
                                                                                                                                                              199
                                                                                                                                                                                              601
                                                                                                                                                                                                                          109
                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTTGGAAA
                                                                                                                                                                                                                     ATTAACGGTAACCCCTCTCCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
                                                                                                                                                                                                                                                                             CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                           AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAATTCAATGAAACACACAAACACAC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                  AAT 663
                                                                                                                                                              AAT 663
                                                                                                                                                                                                                                                                                                                  AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                              TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                          TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                      ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
ilarity 100.0%;
Conservative (
ANDREE LAHAYE
ERIC DE BUYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 663; DB 10;
Pred. No. 3.1e-186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                     600
                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                           660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                         600
                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                               660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
               S
                                             밁
                                                                       á
                                                                                                        밁
                                                                                                                               Ş
                                                                                                                                                                  吊
                                                                                                                                                                                            Ş
                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                US-09-909-207-2
                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
                                                                                                        121
               241
                                                                          181
                                                                                                                                  121
                                                                                                                                                                  61
```

ঠ

밁 ð 밁

ş 밁 ঠ 밁

ঠ 밁 र् 밁 5 á

유

밁

ঠ

```
Best Local Similarity Matches 663; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-429-0625
TELEFAX: (202) 293-1850
TELEX: 650 383-5605
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: CDS
LOCATION: 1..663
SEQUENCE DESCRIPTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: Wilhlem F. Gadiano, Esq.
REGISTRATION NUMBER: 37,136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC Compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PSTENTIN Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/09/909,207
FILING DATE: 19-Uul-2001
CLASSIFICATION: «Unknown»
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 29
CORRESPONDENCE ADDRESS: 29
ADDRESSEE: WILLIAN BRINKS HOFER GILSON & LIONE
STREET: 2000 K St., N.W., Suite 200
                                                                                                                                                                                                                               61 GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                          1 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTTGGAAA
                                                                                                                                                         AACAATGTTAACAACATATTATTCCGTAAAAGGTAAAAAATTCAATGAAACACAAAACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY:
LOCATION:
TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTTGTCGACAGT
                                                                                          CITY: Washington
STATE: D.C.
COUNTRY: U.S.A.
                                                          GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                      CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 663 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: 08/470,953
FILING DATE: 06-JUNE-1995
                                                                                                                                   AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAAATTCAATGAAACACAAAACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN: Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: 4121-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     얶
                                                                                                                                                                                                                                                                                                                                                               100.0%; ilarity 100.0%; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PIERRE LEDOUX
RENE DETROZ
INVENTION: Xylanase, microorganisms produced it.
DNA molecule, processes for preparati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQ ID
                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                             Score 663; DB 10;
Pred. No. 3.1e-186;
); Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ν.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Version
                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             preparation
                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of this
                                                                                            240
                                                                                                                                                                                                                                                 120
                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                           60
                     300
                                                          240
                                                                                                                                     180
                                                                                                                                                                                                            120
```

m

g ઠે

8

엄 ò

ઠ

ò

ð g δ 쉱

```
201
                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          660
                                                                                                                                                                                                                                                                                           141
                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                        261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC 741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 621
                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                               CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                              142 GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                        202 AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                382 TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
                                                                                                                                                                                                                                                       1 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGTTGGATTATGGAAA
                                                                                                                                                                                                                                                                                                                              GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAACAAGTTGGTAACATGTCCATAAACTACGAGCCAACTTCCAAACCAAATGGTAATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rarrirargegrerargegreregreregreererreregrantarrarreregreger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481 AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                   ö
                                                                                                                                                                                 Length 744;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: Xylanase, microorganisms produced it,
                                                                                                                                                                                                                   Indela
                                                                                                                                                                               Query Match 100.0%; Score 663; DB 10; Best Local Similarity 100.0%; Pred. No. 3.3e-186; Matches 663; Conservative 0; Mismatches 0;
                                                                                                         STRAIN: Bacillus
SEQUENCE DESCRIPTION: SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 5, Application US/09909207; Patent No. US20020115181A1; GENERAL INFORMATION:
HAPPLICANT: ANDREE LAHAYE
PIERRE LEDOUX
RENE DETROZ
                                                    TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
ORIGINAL SOURCE:
LENGTH: 744 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAT 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAT
                                                                                                                                ;
US-09-909-207-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-909-207-5
                                                                                                                                                                                                                                                                                           82
                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                             ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INVENTION: Xylanase, microorganisms produced it,
DNA molecule, processes for preparation of this xylanase and uses thereof
                                                                                                                                                                                                                                                         540
TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT 300
                                                      TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCATGATGATGGAGGA 360
                                                                                                                              ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA 420
                                                                                                                                                                                 480
                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                              CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA 600
                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                      601 ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC 660
                                                                                                         ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA 420
                                 TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                               TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                       TITAAACAATATIGGAGTGTICGAAGATCGAAACGCACGAGGGGCACGATITCTGTCAGC
                                                                                                                                                                                                                                                       AACCACTTTAGAGCGTGGGAAACTTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                       AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                              CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 29
CORRESPONDENCE ADDRESS:
ADDRESSEE: WILLIAN BRINKS HOFER GILSON & LIONE STREET: 2000 K St., N.W., Suite 200
CITY: Washington
STATE: D.C.
COUNTRY: U.S.A.
ZIP: 20006
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0,
CURRSNT APPLICATION DATA:
APPLICATION NUMBER: US/09/909,207
FILING DATE: 19-Jul-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Wilhlem F. Gadiano, Esq. REGISTRATION NUMBER: 37,136
REFERENCE/DOCKET NUMBER: 4121-40
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: 08/470,953
FILING DATE: 06-JUNE-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE: 202-429-0625
TELEFAX: (202) 239-1850
TELEX: 650 383-5605
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 4, Application US/09909207
Patent No. US20020115181A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: ANDREE LAHAYE
ERIC DE BUYL
PIERRE LEDOUX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RENE DETROZ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAT 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAT 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 3
US-09-909-207-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                       361
                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                              541
                                                                     301
                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                   301
                                                                                                                                                                               421
                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                  셤
                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                       셤
```

```
; NAWE/KEY: sig_peptide
; LOCATION: 1..81
; SEQUENCE DESCRIPTION: SEQ ID NO:
US-09-909-207-5
                   S
                                                       밁
                                                                                        ঠ
                                                                                                                               문
                                                                                                                                                                  ঠ
                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: 08/470,953
PILING DATE: 06-JUNE-1995
ATTORNEY/AGENT INFORMATION:
NAME: Wilhlem F. Gadiano, Esq.
REGISTRATION NUMBER: 37,136
REFERENCE/DOCKET NUMBER: 4121-40
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-429-0625
TELEPHONE: 202-429-0625
TELEFAX: (202) 293-1850
TELEFAX: 650 383-5605
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 100.
Matches 663; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/09/909,207
FILING DATE: 19-Jul-2001
CLASSIFEICATION: cUnknown>
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: WILLIAN BRINKS HOPER GILSON & LIONE
STREET: 2000 K St., N.W., Suite 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: DNA (genomic)
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                     241
                                                         262
                                                                                            181
                                                                                                                                 202 AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAATTCAATGAAACACAAAACACAC
                                                                                                                                                      121 AACAATGTTAACAACATATTATTCCGTAAAAGGTAAAAAATTTCAATGAAACACAACACAC
                                                                                                                                                                                                        142 GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                             61 GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                               82 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA 141
                                                                                                                                                                                                                                                                                                     1 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                               LENGTH: 744 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Washington STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: mat_peptide LOCATION: 82..744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN: Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 20006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION: 1..744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                          100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA molecule, processes for preparation of this xylanase and uses thereof: 29
                                                                                                                                                                                                                                                                                                                                                           <u>.</u>
                                                                                                                                                                                                                                                                                                                                                       Score 663; DB 10;
Pred. No. 3.3e-186;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                     180
                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                      60
                     300
                                                         321
                                                                                            240
                                                                                                                                 261
                                                                                                                                                                                                          201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 5
US-09-909-207-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 10, Application US/09909207 Patent No. US20020115181A1 GENERAL INFORMATION:
                     TELEX: 650 383-5605
INFORMATION FOR SEQ ID NO: 10:
                                                                                                        COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Ver
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/99/909,207
FILING DATE: 19-Jul-2001
CLASSIFICATION: «Othknown»
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/470,953
FILING DATE: 06-JUNE-1995
ATTORNEY/AGENT INFORMATION:
NAME: Wilhlem F. Gadiano, Esq.
REFERENCE/DOCKET NUMBER: 37,136
REFERENCE/DOCKET NUMBER: 4121-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
ADDRESSEE: WILLIAN BRINKS HOPER GILSON & LIONE STREET: 2000 K St., N.W., Suite 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: Xylanase, microorganisms produced it,

DNA molecule, processes for preparation of this xylanase
and uses thereof
                                                       TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-429-0625
TELEFAX: (202) 293-1850
   SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: ANDREE LAHAYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  322 TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAT 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAT 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTAACGGTAACCCTCTCCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGACTTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: Washington STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ERIC DE BUYL
PIERRE LEDOUX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RENE DETROZ
                                                                                                                                                                                                                                                                                                                      Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
```

```
DNA molecule, processes for preparation of this xylanase and uses thereof CORRESPONDENCE ADDRESS: 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   701 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA 760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATTTATGCGTCTATGGATTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               821 AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAAATTCAATGAAACACACAAACACACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          761 GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1513;
                                                                                                                                                                                                                                                                          COMPUTER KEALABLE FORPY

MEDIUM TYPEL FORPY disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: PATCHIN Felease #1.0, Version #1.25

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/909,207

FILING DATE: 19-Jul-2001

CLASSIFICATION NUMBER: 08/470,953

PILING DATE: 06-JUNE-1995

ATPORNEY/AGENT INFORMATION:

NAME: Wilhlem F: Gadiano, Esq.

REGISTRATION NUMBER: 37,136

REGISTRATION NUMBER: 37,136

TELECAMINICATION INFORMATION:

TELECAMINICATION NUMBER: 31,136

TEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                            & LIONE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 663; DB 10;
100.0%; Pred. No. 4.8e-186;
vative 0; Mismatches 0;
                                                                                                      ADDRESSEE: WILLIAN BRINKS HOFER GILSON OF STREET: 2000 K St., N.W., Suite 200 CITY: Washington STATE: D.C.
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCATION: 620.700
SEQUENCE DESCRIPTION: SEQ ID NO: 11:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: mat_peptide
LOCATION: 701..1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: CDS
LOCATION: 620..1363
                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN: Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity 100.
Matches 663; Conservative
                                                                                                                                                                                                                                     ZIP: 20006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-909-207-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       941 TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1181 AACCACTTTAGAGCGTGGGAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG 1240
                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1241 CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1301 ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAC 1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            660
                                                                                                                                                                                                                                                                                                                                                                                                              701 CAAATCGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA 760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATAGCGGTGCCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  761 GATAGCGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCAATGG 820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      821 AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAATTCAATGAAACACAAAACACAC 880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT 300
                                                                                                                                                                                                                                                                                                                                                            .09
                                                                                                                                                                                                                                                                                                                                                            CAAATCSTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1061 ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGTTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGGGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTAACGGTAACCCTCTCTCAACTATTAGTAATGACGAGGGATAACTTTGGATAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACAATGTTAACAACATATTATTCCGTAAAGGTAAAAAATTCAATGAAACACAAACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGGGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                             Length 1513;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: AND EB LAHAYE RENC DE BUYL ENDOUX RENE LEDOUX RENE DETROC TITLE OF INVENTION: Xylanase, microorganisms produced it,
                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                        Query Match 100.0%; Score 663; DB 10; Best Local Similarity 100.0%; Pred. No. 4.8e-186; Matches 663; Conservative 0; Mismatches 0;
                                                                                                                                                   SEQUENCE DESCRIPTION: SEQ ID NO: 10:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 11, Application US/09909207
Patent No. US20020115181A1
GENERAL INFORMATION:
LENGTH: 1513 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                       TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAT 1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAT 663
                                                                                                                                                                                                        US-09-909-207-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 6
US-09-909-207-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1121
                                                                                                                                                                                                                                                                                                                                                                 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1361
                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

820 180 880

120

Gaps

940

```
Sequence 1, Application US/09770621
Patent No. US20010024815A1
GENERAL INFORMATION:
APPLICANT: M ntyl , Arja
APPLICANT: Vehmaanper , Jari
APPLICANT: Fageratr m, Richard
APPLICANT: Lantto, Raija
APPLICANT: Paloheimo, Marja
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 7
US-09-770-621-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Paloheimo, Marja
APPLICANT: Suominen, Pirko
APPLICANT: Lahtinen, Tarja
TITLE OF INVENTION: Production ar
NUMBER OF SEQUENCES: 39
CORRESPONDENCE ADDRESS:
                                                                                                                                                                              APPLICATION NUMBER: US
FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 01
               PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 0
FILING DATE: 29-JUL-1994
                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM FC COMpatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 0
PILING DATE: 31-OCT-1994
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 1100 New 1
CITY: Washington
STATE: D.C.
COUNTRY: U.S.A.
                                                                                                                                                 CLASSIFICATION:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     941
                                                                                                                                                                                                                                                                                                                                                                                          20005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAT 1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAAATGTATGAAGTCGCG 1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAAATGTATGAAGTCGCG 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGC 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGGGCAACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATTTATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGT 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAT 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTAACGGTAACCCTCTCACTATTAGTAATGACGAGAGCATAACTTTGGATAAAAAC 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EE: STERNE, KESSLER, GOLDSTEIN & FOX, P.L.L.C. 1100 New York Ave., N.W. Suite 600
                                                                                                                                                                                                                                                            US/09/770,621
                                  US 08/282,001
                                                                                                                                                                                    08/590,563
                                                                                                          08/332,412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and Secretion of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1060
```

```
밁
                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
US-09-770-621-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                         US-10-286-993-1
                                     GENERAL INFORMATION:
APPLICANT: Mantyla, Arja
APPLICANT: Paloheimo, Marja
APPLICANT: Lantto, Raija
APPLICANT: Fagerstrom, Richard
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 238; Conserv
                                                                                                                                 Sequence 1, Application US/10286993 Publication No. US20030148453A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TBLEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1375 base pairs
TYPE: nucleic acid
STRANDEDNESS: No. US20010024815A1 Relevant
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION: TELEPHONE: 202-371-2600
TELEFAX: 202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION: NAME: Bugaisky, Lawrence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Bugaisky, Lawrence B.
REGISTRATION NUMBER: 35,086
REFERENCE/DOCKET NUMBER: 1050.0340003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY:
                                                                                                                                                                                                                                                   965
                                                                                                                                                                                                                                                                                     558
                                                                                                                                                                                                                                                                                                                            905
                                                                                                                                                                                                                                                                                                                                                                                                     845
                                                                                                                                                                                                                                                                                                                                                                                                                                          438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         803
                                                                                                                                                                                                                                                                                                                                                               498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              318 ACCAGGAGCAACGCCTAAGGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCCATAAACTACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGG
                                                                                                                                                                                                                                                   CCAGAGCAGCGGTAGCTCCACCGTCTCCATCAGCGAGGGTGGCAACCCCGGCAACCC 1021
                                                                                                                                                                                                                                                                                                                                                                                                     CGTCCGGCAGCAGAAGCGGACCAGCGGCACCATCACCATCGGCAACCACTTCGACGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGAGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GACTCTTAGAGTCAATCAACCCTTCCATTAAGGGGGATTGCCACATTTAAACAATATTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CACCGG----CACCTACAAGGGCACCGTCACCACCGACGGGGAACGTACGACATCTACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGGACCAGGAACCCGCTCGTCGAGTACTACATCGTCGAGAGCTGGGGCACCTACCGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGGACTGTTGACCCTCTTGTCGAATATTATTGTCGACAGTTGGGGCAACTGGCGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACCGTGACCTACAACGCCTCCTTCAACCCGGTCGGGTAACGGCTACCTCCACGCTCTACGG
                                                                                                                                                                                                                                                                                     TCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGAATTAACGGTAACCC 614
                                                                                                                                                                                                                                                                                                                          GGCCCGCGCCGCATGAACCTGGGCAGCCACGACTACCAGATCATGGCGACCGAGGGCTA
                                                                                                                                                                                                                                                                                                                                                               GGAMMACTTAGGGATGMATATGGGGAMMATGTATGAAGTCGCGCTTACTGTAGAAGGCTA 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACCTGGCGGTACAACGCGCCGTCCATCGAGGGCACCCGGACCTTCCAGCAGTTCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18.0%;
ilarity 57.1%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                303..1334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 119.4; DB 9; Length Pred. No. 8.2e-25; O; Mismatches 176; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1375;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
··
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                          497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  317
                                                                                                                                                                                                                                                                                                                                                                                                     904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         667
                                                                                                                                                                                                                                                                                                                              964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 727
```

APPLICANT: Lahtinen, Tarja
APPLICANT: Suominen, Pirko
APPLICANT: Vehmaanpera, Jari
TITLE OF INVENTION: Production and Secretion of
TITLE OF INVENTION: Fungi
FILE REFERENCE: 1716.0340004
FILE REFERENCE: 1716.0340004
CURRENT APPLICATION NUMBER: US/10/286,993
CURRENT FILING DATE: 2002-08-13
PRIOR APPLICATION NUMBER: US/99/120,804
PRIOR APPLICATION NUMBER: PCT/F197/00037
PRIOR APPLICATION NUMBER: PCT/F197/00037
PRIOR FILING DATE: 1997-01-24

of Proteins

Ħ

```
US-10-213-990-71
                                                                                                               191
                                                                                                                                                   253
                                                                                                                                                                                                                       313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      551
                                                                                                       a
                                                                                                                                                                                 g
                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                           요
                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                               ò
                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: SING, Wing L.
APPLICANT: SING, Wing L.
APPLICANT: SING, Wing L.
APPLICANT: SING Wing L.
APPLICANT: SING Wing L.
AITLE OF INVENTION: Modified Xylanases Exhibiting Increased Thermophilicity
TITLE OF INVENTION: and Alkalophilicity
TITLE OF INVENTION: and Alkalophilicity
FILE REFERENCE: 027367-506US
CURRENT APPLICATION NUMBER: US/10/307,441
CURRENT FILING DATE: 2001-15-21
PRIOR FILING DATE: 2001-05-31
PRIOR FILING DATE: 2000-05-31
NUMBER OF SEQ ID NOS: 51
SEQ ID NO 39
LENGTH: 596
                                                                                                                                                                                                                                                                                                                                                                  667
                                                                                                                                                                                                                                                                                                                                                                                                        317
                                                                                                                                                                                                                                                                                                                                                                                                                           668 CTGGACCAGGAACCCGCTCGTCGAGTACTACATCGTCGAGAGCTGGGGCACCTACCGGCC 727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          438 TGTTCGAAGATCGAAACGCACGAGGGCACGATTTCTGTCAGCAACCACTTTAGAGCGTG 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          845 cerccecracadadeceaccaecaeceacearcarcarcearecaecaecaecere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCGCTTACTGTAGAAGGCTA 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCCGCGCCGCCGCATGAACCTGGCCACGACTACCAGATCATGGCGACCGAGGGCTA 964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       965 cchadachccacarhacrcchcarchrchagagagaragahaccccaahcc 1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       558 TCAAAGTAGCGGAAGTGCTAATGTATATAGCAATACACTAAGAATTAACGGTAACCC 614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        198 GTCCATAAACTACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGG
                                                                                                                                                                                                                                                                                                                                                               608 daccercáracaacecereciricaacecereseiradeseriaces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            318 ACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              728 cacceg---cacctacaagggacccaccaccgacgggaaggaacgacatctacga
                                                                                                                                                                                                                                                          DB 12; Length 1375;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OTHER INFORMATION: Description of Artificial Sequence: TrX
                                                                                                                                                                                                                                                       Score 119.4; DB 12; Length
Pred. No. 8.2e-25;
0; Mismatches 176; Indels
                                                                                                         TYPE: DNA
ORGANISM: Actinomadura flexuosa (Strain: DSM43186)
PREATURE:
NAME/KEY: CDS
I CCATION: (303) .. (1337)
OTHER INFORMATION: Product= AM35 xylanase
US-10-286-93-1.
PRIOR APPLICATION NUMBER: US 08/590,563 PRIOR FILING DATE: 1996-01-26 NUMBER OF SEQ ID NOS: 18 SOFTWARE: Patentin version 3.0 SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Sequence 39, Application US/10307441
; Publication No. US20030166236A1
                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 57.1%;
Matches 238; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION
                                                                                          LENGTH: 1375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 9
US-10-307-441-39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-307-441-39
                                                                                                                                                                                                                                                                                                                                                                                                    258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠ
                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
```

```
Sequence 71, Application US/10213990
Fublication No. US20030082595A1
GENERAL INFORMATION:
APPLICANT: Jiang Bussey, Howard
APPLICANT: Storms, Reg
APPLICANT: Storms, Reg
APPLICANT: Roemer, Terry
TITLE OF INVENTION: NUCLEIC ACIDS OF ASPERGILLUS FUMIGATUS ENCODING INDUSTRIAL
TITLE OF INVENTION: NUCLEIC ACIDS OF USE
TITLE OF INVENTION: NUCLEIC ACIDS OF USE
TITLE OF STORMS AND METHODS OF USE
FILE REFERENCE: 10182-019-999
CURRENT APPLICATION NUMBER: US/10/213,990
CURRENT PILING DATE: 2002-08-05
NUMBER OF SEQ ID NOS: 72
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                          312
                                                                                                                                                                                                                                                                                                                                                                                                                                                 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         316
                                                                                                                                                                                       250
                                                                                                                                                                                                                                                                                                                  251 TATGGCTGGTCTAGAAGCCACTGATTGAATATTACATTGTCGAAAATTTCGGTACCTAC 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       490 AGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCGCTTACTGTA 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            491 AATGCATGGCACAGCAAGGGTFAACCCTAGGTACAATGGATTATCAAATCGTAGGGTG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          317 ACCTGTCCGTGTATGGATGGACTACCAACCCCCTAGTCGAATACTACATCCTCGAGAACT 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    302 GGGGCA---ACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAG 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                377 ATGGCAGTTACAATCCTGGCTCGGCATGACGCACAAGGCCACCGTCACCAGCGATGGAT 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            371 ATCTACCGTACCCAACGCGTTAATCAGCCATCGATCATTGGAACCGCCACCTTTTATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                              311 AATCCGAGTACCGCCGCCACAAATTAGGCGAAGTCACTAGTGATGGATCCGTATATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                370 ATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        431 TACTGGAGTGTTAGACGTAATCATCGGAGCTCCGGTTAATACTGCGAATCACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      257 Arccadegadraaccardacarraccrrcrededagcrrcaarccrrccedaaardcrr
                                                                                                                                                                                    AATAAGGTGATCAACTTCTCGGATCTTAATCCGAATGGGAATTCATACTTAAGCGTC
                                                                                                                                                                                                                                                                                                                                                                                  CGTCC----ACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        430 TATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     242 ATTIATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTT
                                                                                                                              193 AACATGTCCATAAACTACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       182 AACAAGTIGGIAACAIGICCAIAAACIACGGAGCCAACTICCAACCAAAIGGGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .;
G
Score 115.2; DB 12; Length 596;
Pred. No. 9.3e-24;
0; Mismatches 163; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 111.4; DB 14; Length 942; Pred. No. 1.6e-22; 0; Mismatches 166; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         550 GAAGGCTATCAAAGTAGCGGAAGTGCTAATGT 581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGGCTACTTCTCGAGTGGTTCCGCTAGTAT
                                                               ö
Query Match
Best Local Similarity 57.7%;
Matches 226; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 57.0%;
Matches 224; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
ORGANISM: Aspergillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ) NAME/KEY: CDS
, LOCATION: (1)...(942)
US-10-213-990-71
```

```
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Jiang, Bo
APPLICANT: Bussey, Howard
APPLICANT: Storms, Reg
APPLICANT: Storms, Reg
APPLICANT: Rosmer, Terry
TITLE OF INVENTION: NUCLEIC ACIDS OF ASPERGILLUS FUMIGATUS ENCODING INDUSTRIAL
TITLE OF INVENTION: ENZYMES AND METHODS OF USE
FILE REFERENCE: 10182-019-999
CURRENT APPLICATION NUMBER: US/10/213,990
CURRENT APPLICATION NUMBER: US/10/213,990
CURRENT FILING DATE: 2002-08-05
NUMBER OF SEQ ID NOS: 72
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 70
LENGTH: 1002
TYPE: DNA
ORGANISM: Aspergillus
US-10-213-990-70
                           δ
                                                                       밁
                                                                                                     ঠ
                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 11
US-10-213-990-70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                   밁
                                                                                                                                                                                 5
                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 70, Application US/10213990 Publication No. US20030082595A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 216; Conserv
                                                                                                                                                                                                                                                                  378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 497
696
                                 558
                                                                       636
                                                                                                             498
                                                                                                                                                     576
                                                                                                                                                                                         438
                                                                                                                                                                                                                             516
                                                                                                                                                                                                                                                                                                        456
                                                                                                                                                                                                                                                                                                                                              318
                                                                                                                                                                                                                                                                                                                                                                                    396
                                                                                                                                                                                                                                                                                                                                                                                                                          261
                                                                                                                                                                                                                                                                                                                                                                                                                                                              336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            201 CATAAACTACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              359
                                                                                                                                                                                                                                                                                                                                    ACCAGGAGCAACGCCTAAGGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAACATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCA
                                                                                                             GGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCGCTTACTGTAGAAGGCTA
                                                                                                                                                                                                                                                                  GACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGGAG
                                                                                                                                                                                                                                                                                                        CTCGGGCATGACGCACAAGGGCACCGTCACCAGCGATGGATCCACCTACGACATCTATGA
                                                                                                                                                                                                                                                                                                                                                                                    GACTACCAÁCCCCTAGTCGAÁTÁCTÁCATCCTCGÁGAACTATGGCÁGTTÁCAATCCTGG
                                                                                                                                                                                                                                                                                                                                                                                                          GACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGCA----ACTGGCGTCC 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATTACCTTCTCTGGCAGCTTCAATCCTTCCGGAAATGCTTACCTGTCCGTGTATGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGTTTCCACTGAGGGATATGAGAGCAGCGGTA 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGCTTACTGTAGAAGGCTATCAAAGTAGCGGAA 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGAATCACTTCAAGGCCTGGGCTAGTCTGGGGATGAACCTGGGTACCCCATAACTATCAGA 616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAACCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAAATGTATGAAGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTTCAACCAATACTGGTCCATCCGCCAAAACAAGCGATCCAGCGGCACAGTCACCACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATTTAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCA 478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCACCTACGACATCTATGAGCACCAACAGGTCAACCAGCCTTCGATCGTCGGCACGGCACGGCCA
                                     TCAAAGTAGCGGAA 571
                                                                                                                                                     CATCCGCCAAAACAAGCGATCCAGCGGCACAGTCACCACCGCGAATCACTTCAAGGCCTG
                                                                                                                                                                                         TGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGAGCGTG 497
                                                                                                                                                                                                                               GCACCAACAGGTCAACCAGCCTTCGATCGTCGGCACGGCCACCTTCAACCAATACTGGTC
                                                                           GGCTAGTCTGGGGATGAACCTGGGTACCCATAACTATCAGATTGTTTCCACTGAGGGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16.6%; Score 110; DB 14; ilarity 57.8%; Pred. No. 4.3e-22; Conservative 0; Mismatches 155;
709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         u
-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              496
                                                                                                                 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  418
                                                                                                                                                                                                                                                                    437
                                                                                                                                                                                                                                                                                                            515
                                                                                                                                                                                                                                                                                                                                                                                      455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                395
                                                                                                                                                       635
```

```
밁
                                                                                                          S
                                                                                                                                                                              δ
                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 12
US-10-213-990-68
                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/10/213,990
CURRENT FILING DATE: 2002-08-05
NUMBER OF SEQ ID NOS: 72
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 68
LENGTH: 705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 68, Application US/10213990 Publication No. US20030082595A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Aspergillus FEATURE: NAME/KEY: CDS LOCATION: (1)...(705)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Jiang, Bo
APPLICANT: Bussey, Howard
APPLICANT: Storms, Reg
APPLICANT: Storms, Reg
APPLICANT: Roemer, Terry
TITLE OF INVENTION: NUCLEIC ACIDS OF ASPERGILLUS FUMIGATUS ENCODING INDUSTRIAL
TITLE OF INVENTION: ENZYMES AND METHODS OF USE
FILE REFERENCE: 10182-019-999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
nes 298; Conserv
                                                                         594
                                                                                                              483
                                                                                                                                                                                                                           474
                                                                                                                                                                                                                                                                                                                                      306
                                                                                                                                                                                                                                                                                                                                                                             354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
654
                                                                                                                                                                                      423
                                                                                                                                                                                                                                                                                                     414
                                                                                                                                                                                                                                                                                                                                                                                                                246
                                                                                                                                                                                                                                                                                                                                                                                                                                                     294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CACCCAGTACTGGTCTGTGCGCACCTCCAAGCGTACCGGCGCACTGTCACCATGGCCAA
                                                                                                                                                                                    TAAACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAA 482
                                                                                                                                                                                                                           ATATGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATT 422
                                                                                                                                                                                                                                                                                                   TACATACAACCCCGGCAGCGGCGGTACCTTCAGGGGCACTGTCAACACCGACGGTGGCAC
                                                                                                                                                                                                                                                                                                                                      CA---ACTGGCGTCCACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAAC
                                                                                                                                                                                                                                                                                                                                                                             GGCTGTCTACGGCTGGACCACCAACCCCTTGATTGAGTACTACGTTGTTGAGTCGTATGG
                                                                                                                                                                                                                                                                                                                                                                                                              ATGCGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCTTTAAGTAGAACCATCAACTACGGAGGCAGCTTCAACCCCAGCGGCAATGGCTACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTGGGCAACTTTGTCGGTGGAAAGGGC-----TGGAACCCTGGAAGCGCTAGGTACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ТСТТААСААСАТАТТАТТСССТАРАССТАРАВСТАРАВАТТСРАТСВАРАСАСАССРАССА 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGGCGGCGACGTGACCTACACCAATGGCGCCGGTGGCTCGTACTCCGTCAACTGGAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGGCACCCCAAGCTCCACCGGCTGGAACAACGGCTACTACTACTCCTTCTGGACTGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGTCACCGACAATTCCATTGGCAACCACGATGGCTATGATTATGAATTTTGGAAAGATAG
                                 TACTGTAGAAGGCTATCAAAGTAGCGGAAGTGCT 576
                                                                           CCACTTCAACGCCTGGAGCAGACTGGGCATGAACCTGGGAACTCACAACTACCAGATTGT
                                                                                                            CCACTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGGAAAATGTATGAAGTCGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGTGGCTCTGGGACAATGATTCTCAATCATGGCGGTACGTTCAGTGCCCCAATGGAACAA 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nilarity 51.9%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 108.8; DB 14; Length 705;
Pred. No. 8e-22;
0; Mismatches 267; Indels 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              179
                                                                                                              542
                                                                                                                                                                                                                                                                                                                                      362
                                                                         653
                                                                                                                                                   593
                                                                                                                                                                                                                           533
                                                                                                                                                                                                                                                                                                     473
                                                                                                                                                                                                                                                                                                                                                                             413
                                                                                                                                                                                                                                                                                                                                                                                                                305
                                                                                                                                                                                                                                                                                                                                                                                                                                                     353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               293
```

RESULT 13 US-10-299-393-1 ; Sequence 1, Ap

Application US/10299393

```
15.8%;
           Publication No. US20030082595A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 55.8°
Matches 221, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          , ORGANISM: Aspergillus
US-10-213-990-64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-213-990-65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              윱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1640 chocacorácito con contra contra contra contra contrativo de cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1760 cécarcarcradarracradarradecradardacia de conservados de conservados de 1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1880 CTGGTCAGTTCGCACCGAGAAGCGAGTCGGCGGAACTGTCACCACGGCCAACCACTTTGC 1939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1940 AGCATGGAAGGCACTTGGACTTGAAATGGCCACTTATAACTATATGATTGTGCCACCGA 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     255 TGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGCAACTGGCG 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     315 TCCACCA---GGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAACATATGATAT 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                432 TIGGAGIGITCGAAGAICGAAACGCACGAGIGGCACGAITTCTGTCAGCAACCACTTTAG 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         195 CATGTCCATAAACTACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCGCTTACTGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 2898;
                                                                                                  APPLICANT: Fish, Neville Marshall
APPLICANT: Fish, Neville Marshall
APPLICANT: Haigh, Nigel Paterson
TITLE OF INVENTION: PERICILIUM FUNICULOSUM STRAIN USEFUL
TITLE OF INVENTION: POR THE PRODUCTION OF ENZYMES
FILE REFERENCE: A32917-PCT-USA-I (072667.0183)
CURRENT APPLICATION NUMBER: US/10/299,393
CURRENT FILING DATE: 2000-211-19
PRIOR FILING DATE: 2000-04-07
PRIOR FILING DATE: 1998-05-06
NUMBER OF SEQ ID NOS: 14
SOFTWARE: FASHENCY FOR WINDOWS VETSION 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 16.0%; Score 106; DB 14; Length 2 Best Local Similarity 56.5%; Pred. No. 1.1e-20; Matches 218; Conservative 0; Mismatches 165; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000 AGGCTACGAGAGCAGTGGCTCTAGTA 2025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA ORGANISM: Penicillium funiculosum
Publication No. US20030108642A1
GENERAL INFORMATION:
APPLICANT: Sabatier, Alain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
(1644)...(2042)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION: (1317)...(1589)
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: (1590)...(1642)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: RBS
; LOCATION: (724)...(730)
US-10-299-393-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: RBS
LOCATION: (570)...(576)
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 1
LENGTH: 2898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
```

; Sequence 64, Application US/10213990

RESULT 14 US-10-213-990-64

```
Sequence 65, Application US/10213990
; Sequence 65, Application US/10213990
; Publication No. US2030082595A1
; GENERAL INFORMATION:
; APPLICANT: Janag, Box
; APPLICANT: Bussey, Howard
; APPLICANT: Roemer, Terry
; TITLE OF INVENTION: NUCLEIC ACIDS OF ASPERGILLUS FUMIGATUS ENCODING INDUSTRIAL
; TITLE OF INVENTION: BUZYMES AND METHODS OF USE
; FILE REFRERENCE: 10182-019-999
; CURRENT APPLICATION NUMBER: US/10/213,990
; CURRENT FILING DATE: 2002-08-05
; NUMBER OF SEQ ID NOS: 72
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 65
APPLICANT: Jiang, Bo
APPLICANT: Bussey, Howard
APPLICANT: Bussey, Howard
APPLICANT: Storma, Reg
APPLICANT: Storma, Reg
APPLICANT: Roemer, Terry
TITLE OF INVENTION: BUXYMES AND METHODS OF USE
FILE REFERENCE: 10182-019-999
CURRENT APPLICATION NUMBER: US/10/213,990
CURRENT FILING DATE: 2002-08-05
NUMBER OF SEQ ID NOS: 72
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 64
LENGTH: 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              304 recarreacecercaceracecercerecerces 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        364 cereraciones de de contraciones de contrac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  484 caaccrcracaagacgacgagaagaargcgcccarccagggaggaggcracrrrrga 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTTAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCGCTTAC 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            604 CTTTGATGCGTGGAGAAATGCGGGTCTGCAATTGGGGAACTTTGACTATATGATTGTTGC 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               249 CGTCTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              366 TGATATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACATTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         426 ACAATATTGGAGTGTTCGAAGATCGAAACGCACGAGGGGCACGATTTCTGTCAGCAACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGGCGTCCACCA---GGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gapa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .;
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 14; Length 712;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 104.8; DB 14; Length
Pred. No. 1.2e-20;
0; Mismatches 172; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            546 TGTAGAAGGCTATCAAAGTAGCGGAAGTGCTAATGT 581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             664 gacggagggaaccagagcagcggcrcrgcrarrar 699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
ORGANISM: Aspergillus
FEATURE:
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; NAME/KEY: CDS
; LOCATION: (1)...(666)
US-10-213-990-65
Search completed: October 20, 2003, 13:35:44 Job time : 1600 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 15.6%; Score 103.6; DB 14; Length 666; Best Local Similarity 56.3%; Pred. No. 2.7e-20; Matches 215; Conservative 0; Mismatches 164; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  380 CTCTTAGAGTCAATCCACCTCCATTAAGGGGGATTGCCACATTTAAACAATATTGGAGTG 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        392 CGGGAGCCACCCATCTCGGCACCGTCGAGAGCGACGGGGCCACGTACAACCTCTACAAGA 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         203 TAAACTACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGGTTGGA 262
                                                                                                                                      632 AGAGCAGCGGCTCTGCTACTAT 653
                                                                                                                                                                            560 AAAGTAGCGGAAGTGCTAATGT 581
                                                                                                                                                                                                                                                                         572 GAAATGCGGGTCTGCAATTGGGGAACTTTGACTATATGATTGTTGCGACGGAGGGGTACC 631
                                                                                                                                                                                                                                                                                                                                    500 AAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCGCTTACTGTAGAAGGCTATC 559
                                                                                                                                                                                                                                                                                                                                                                                                     512 TTCGGACTTCGCACCGGCAGAGTGGAACTGTGACGACGAAGAACCACTTTGATGCGTGGA 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                  440 TTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGAGCGTGGG 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     452 CGACGCGGACGAATGCGCCGTCCATCCAGGGCACGGCTACTTTTGACCAGTACTGGTCGG 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         322 -- GGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACGAGA 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        332 CGACCAGTCCGCTGGTCGAATTCTACATCGTGGAGAGTTACGGCTCCTATGACCCCCTCCA 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         263 CTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGCAACTGGCGTCCACCA- 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           272 TCACCTACAGCGGCTCCTGGCAGACCAGCGGAAACGGCTACCTCTCCGTGTACGGCTGGA 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3; Gaps
```

Mon

Scoring table:

Minimum DB Maximum DB

Database

Perfect score:

Sequence:

OM nucleic

ё ё

Run

```
Scriptum bicolor (sorghum)
Sorghum bicolor (sorghum)
Sorghum bicolor (sorghum)
Sorghum bicolor (sorghum)
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poacese; PACCAD clade; Panicoidese; Andropogoneae; Sorghum.

In (bases 1 to 738)
Cordonnier-Pratt, M.-M., Wentzel, V., Suzuki, Y., Sugano, S., Klein R.R., Liang, C., Sun, F., Sullivan, R., Shah, M., Salzman, R., Chua Tan , N., Gonzalez, M., Lane, S., Miller, V., Nanda, P., Olaseinde, O., Eastman, A. and Pratt, L.H.

An EST database from Sorghum: 1-aminocyclopropane-1-carboxylic acid (ACC)-treated seedlings
           AQ160254 mgxbb0031

AQ352448 mgxbb0018

AQ399120 mgxbb0016B

AQ48084 mgxbb0016B

AQ48084 mgxbb0016B

AQ48084 mgxbb016B

BQ165950 WHE0821-0

BQ156680 WHE0821-0

BM1349078 wHE0821-0

BM1349078 wHE0821-0

BM1349078 wHE0821-0

BM135798 WHE0821-0

AC631020 RPCI-11-4

CA447770 UI-H-EIO-1

BC02253 MOM muscuch

AC631020 RPCI-11-4

CA447770 UI-H-EIO-1

BC022531 MOM muscuch

BC022531 MOM muscuch

BC022531 MCI-EIO-1

BM19562 ph36h05.4

BM897662 ph36h05.4

BM89764 Ocities

BH938410 odf67f12.

CL166626 K-EST0220

AV15991 AV315991

BM10570 511833 WA

AL10677 Drosoph11

BM10570 511833 WA

AC007299 Home sapi

AG070209 Home sapi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FIHI 48 B06.91 A002 Ethylene-treated seedlings Sorghum bicolor cDNA Clone ETH1 48 B06 A002 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Laboratory for Genomics and Bioinformatics
The University of Georgia, Department of Plant Biology
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA
Tel: 706 542 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Other EST8: BTH1 48 B06.b1 A002 Contact: Cordonnier-Pratt MM
AQ361561
AQ160254
AQ35548
AQ355412
AQ355412
AQ399120
AQ399120
AQ399756
BQ165950
BQ165950
BQ164593
BQ164593
BQ164593
BQ164593
BQ164593
BQ10128
BBM135798
BBM135798
BBM135798
BBM135798
BBM136792
AQ640233
AQ63020
CCA447770
BQ10128
BM897662
CCA447770
BQ10128
BM897662
CCA447770
BQ10128
BM897662
CCA41770
BQ10128
BM897662
CCA41770
BQ10128
BM897662
CCA41770
BQ10128
BM997662
CCA417770
BQ10128
BM997662
CCA417770
BQ10178
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BM107570
N20977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BH989520
AG007299
AG007300
BZ045202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CD464145 _ CD464145.1 GI:31385413
 38.8
38.8
38.8
38.2
                                                                                                                                                                                                                                                                                                                                                                              37.6
37.2
37.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                      36.66.68
36.66.68
36.66.68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 1
CD464145
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
CD464145 ETH1 48 B
CD458837 F908 0451
AQ160513 mgxb0006C
AQ447125 mgxb0005C
                                                                                         October 20, 2003, 10:40:41; Search time 2045 Seconds (without alignments) 7879.642 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                              CAAATCGTCACCGACAATTC..........TAACTTTGGATAAAACAAT 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Description
        GenCore version 5.1.6
(c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                  22781392 segs, 12152238056 residues
                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                               nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                              summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CD464145
CD458837
AQ160513
AQ447125
                                                                                                                                                                                                       IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 sv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em gss hum: *
em gss inv: *
em gss pln: *
em gss vrt: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_gss_fun:*
em_gss_mam:*
em_gss_mus:*
em_gss_pro:*
em_gss_rod:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_gss_rod:*
em_gss_phg:*
em_gss_vrl:*
gb_gssl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                em_esthum:
em_estru:
em_estru:
em_estru:
em_estru:
em_estru:
em_estru:
em_estru:
em_estru:
em_estru:
gb_est::
gb_est::
gb_est::
gb_est::
em_estfu:
em_estfu::
em_estfu::
                                                                                                                                                                                                                                                                                                      seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14
14
28
28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                    US-09-909-207-1
                                                                                                                                                                                                                                                                                                                                                                                                                         estba:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               738
921
603
670
                        Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                          ea
Ea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query
Match 1
                                                                                                                                                                                                                                                                                                                                                                                                          EST: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13.1
12.6
12.5
12.5
```

86.6 83.4 82.8

Score

Š. Result

FEATURES

Harris, L.J.,

Hattori

Sprott, D.

grown on

KlA

```
RESULT 2
CD458837
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 204;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                            557
                                                                                                                                                                                                                                                        645
                                                                                                                                                                                                                                                                                                                                                   585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             345
                                                                                                                                                                 705
                                                                                                                                                                                                                                                                                                      497
                                                                                                                                                                                                                                                                                                                                                                                               437
                                                                                                                                                                                                                                                                                                                                                                                                                                               525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        exclude polya.

Seq primer: Sug5 (CTTCTGCTCTAAAAGCTGCG).

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: mmpratt@uga.edu
Library constructed by Dr. Yutaka Suzuki and Dr. Sumio Sugano in
the Human Genome Center, University of Tokyo Institute of Medical
Science; plant material and RNA prepared at Texas A & M University;
sequencing done in the Laboratory for Genomics and Bioinformatics,
University of Georgia. Sequence ends have been trimmed to exclude
vector and regions below Phred quality 16. Three-prime sequences
CD458837 921 bp mRNA linear EST 03-JUN-2003 Fg08_04b10_A Fg08_AAFC_ECORC_Fusarium_graminearum_complex_substrate Gibberella zeae cDNA clone Fg08_04b10, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 are presented as their reverse complement and have been trimmed to
                                                                                                                                                                 ACTACAGCTCTGGCTCTGCCA 725
                                                                                                                                                                                                                                                                                                                                                      CTGTTCGACGCAACAAGCGATCCAGCGGATCCGTCAACACCGGTGCTCACTTCCAGGCCT
                                                                                                                                                                                                                                                                                                                                                                                               GTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGAGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                               TCAGCACCCGTGTCAACGCCCCCCCCCATTGAGGGTAACAAGACCTTTCAGCAGTTCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CA---GGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGACTCAGAACCCTCTCATCGAGTACTACATCGTTGAGAACTTCGGCACCTACAACCCCT 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGCAACTGGCGTCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCATAAACTACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGGTT
                                                                                                                                                                                                               ATCANAGTAGCGGAAGTGCTA 577
                                                                                                                                                                                                                                                          GGAAAAATGTCGGCCTCAACCTTGGTAACCACAACTATCAGATCCTTGCTGTTGAGGGCT
                                                                                                                                                                                                                                                                                                   GGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCGCTTACTGTAGAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTCCGGCCGCCAGAAGAAGGGTGAAGGTCACTGTTGACGGATCTGTCTACGACATCTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCATCAAGTACTCTGGTACTTACAACATCAACGGAAACAGCTACCTCGCTGTTTACGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      706 583 0210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /Clone lib="Ethylene-treated seedlings"
/note="Vector: pMEIBS-FLJ; Site 1: XhOI; Site 2: XhOI; The
/note="Vector: pMEIBS-FLJ; Site 1: XhOI; Site 2: XhOI; The
library was prepared from polyA+ RNA from seedlings grown
in hydroponic culture. At 8 days of age, medium was
supplemented with 0.5 mM 1-aminocyclopropane-1-carboxylic
acid (ACC) to induce endogenous ethylene (ETH) production.
Roots and shoots were harvested after 27 and 72 hr and
material from both time points was combined prior to RNA
isolation. Double-stranded cDNA was cloned
unidirectionally into different DraIII sites of the
pMEIBS-FLJ vector (5-prime DraIII site is CACTGTGTG,
3-prime DraIII site is CACCATGTG). XhOI excises the cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:4558"
/clone="ETH1_48_B06_A002"
/lab_host="DH108-T1_phage_resistant_E._coli"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cultivar="BTx623"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                organism="Sorghum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cype="mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 86.6; DB 14;
Pred. No. 2.7e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        164 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches 174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        164 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       738;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           524
                                                                                                                                                                                                                                                                                                                                                                                                    496
                                                                                                                                                                                                                                                                                                                                                                                                                                                  584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                404
                                                                                                                                                                                                                                                                                                          556
                                                                                                                                                                                                                                                                                                                                                      644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         376
                                                                                                                                                                                                                                                             704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                          당. 원
                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                            723
                                                                                                                                                                 497
                                                                                                                                                                                                                 603
                                                                                                                                                                                                                                                             437
                                                                                                                                                                                                                                                                                                          543
                                                                                                                                                                                                                                                                                                                                                        377
                                                                                                                                                                                                                                                                                                                                                                                                    483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      200 CCATAAACTACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         i (bases 1 to 921)
Matson,R.J., Heys,R., Chapado,J., Lacroix,C., Ouellet,T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CD458837
CD458837.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Agriculture and Agri-food Canada
Bldg. 20, Central Experimental F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Watson, Robert J. Eastern Cereal and Oilseed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A cDNA library prepared
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gibberella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tel: (613) 759-1655
Fax: (613) 759-1701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complex plant substrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Fungi; Ascomycota; Pezizomycotina;
Hypocreomycetidae; Hypocreales; Nectriaceae; C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gibberella
                                                                                                                                                                                                                 CCATCCGCCGCAACAAGCGTACCAGCGGCTCCGTCAACATGCAGAACCACTTCAATGCTT
                                                                                                                                                                                                                                                                                                                                                                                                 GCAGCCAGGCTCAGCACCGAGGTACCGTCTACACCGACGGTGACACCTACGATCTCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGGA----GCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACG
                            ACCAGAGCAGTGGCTCATCTTCTATCTATGTCCAGAC 759
                                                                        ATCAMAGTAGCGGAAGTGCTAATGTATATAGCAATAC 593
                                                                                                                                                                                                                                                             GTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGAGCGT
                                                                                                                                                                                                                                                                                                                                                      AGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGACCCGCGGTCCCTCGTCGAGTACTACGTCATCGAGAGTTACGGTTCTTACAACCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGGCAACTGGCGTCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCATCAACTACGGAGGTTCCTTCAACCCTCAGGGTAACGGATACCTTTGCGTTTACGGAT
                                                                                                                        GGAGATCTGCTGGCATGAACCTCGGAAACCACTACTACCAGATTCTGGCCACTGAGGGTT
                                                                                                                                                                 GGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCGCTTACTGTAGAAGGCT
                                                                                                                                                                                                                                                                                                          TGTCCACCCGTTACCAACAGCCTTCGATCGACGGTGTTCAGACCTTCAACCAGTACTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        watsonrj@agr.gc.ca.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              XhoI, Fusarium graminearum grown on a complex plant substrate-- wheat leaves treated to remove most of the low molecular weight, water-soluble components."

254 c 232 g 232 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ubstrate"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="Mycelium"
/dev_stage="Asexual"
/lab_host="E. coli_DH10B"
/clone_lib="Fg08_AAFC_ECORC_Fusarium_graminearum_complex_s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          organism="Gibberella
/mol_type="mRNA"
/strain="DAOM 180378"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:5518"
/clone="Fg08_04b10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'note="Vector: pBluescript II+; Site_1: EcoRI; Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GI:31373577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chapados,J., Couroux,P., Harris,
let,T., Robert,L.S., Singh,J.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 83.4; DB 14; Pred. No. 1.4e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches 186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fusarium graminearum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Farm,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Centre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ottawa,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 921;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; Sordariomycetes; Gibberella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ontario,
```

ω --

Gaps

259

422

319

482

436 542 376

556 662 496 602

722

Ş 밁 र् 밁 ঠ 밁 ક В ঠ 밁 ঠ 밁

ĵ

```
391 AATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGGAGTGTTCGAAGATCG 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           High quality sequence stop: 263.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AQ447125.1 GI:4576262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 54.6°
Matches 209; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .670
                                                                                                                                                                                                                                                                          568 GGAAGTGCTA 577
                                                                                                                                                                                                                                                                                                                        24 GGCTCCGCCA 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                              RESULT 4
AQ447125/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                        유
                                                                                                                            a
                                                                                                                                                                                 ð
                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                 셤
                                                                                        ò
                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="maxb000cc1s"
/tissue_type="Protoplasts"
/tissue_type="Protoplasts"
/lab.host="E. coli DH108"
/clone lib="cutoff Rice Blaat BAC Library"
/clone lib="cutoff Rice Blaat BAC Library"
/clone lib="cutoff Rice Blaat BAC Library"
/note="Vector: pBACWICH; Site_1: HindIII; Site_2: HindIII;
Rice blast is one of the most devestating fungal diseases
of rice world wide. It is a filamentous ascomycete with
a haploid genome (n=7) of approximately 40 Mbp. Rice
blast is an important model fungal pathogen for studying
numerous aspects of the fungal-host interaction. In
order to facilitate genome wide analysis, a BAC library
containing 9216 clones with an average insert size of 130
kbp was constructed. This library represents greater
than 25X genome coverage. High density colony filters
are available upon request." I others
                                        mgxb0006C21r CUGI Rice Blast BAC Library Magnaporthe grisea genomic Clone mgxb0006C21r, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           154 AAAAAATTCAATGAAACACAAAACACCAACAAGTTGGTAACATGTCCATAAACTACGGA 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         444 AAGAAAAAAAAAGAGACTACCAACAACAACAACAAAAAACAGCGGCGTCATCAACTACTCG 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  274 CITGICGAATATTATATTGTCGACAGTTGGGGCAACTGGCGTCCACCA---GGAGCAACG 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGGTTGGACTGTTGACCCT 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  384 Gechacitachacciccanadechárcricarhacchaccicircriacecricardecacanacice 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             324 crearicadracraceregicadedecrirregeaecracadecreesegeeecaec 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           331 CCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACGAGACTCTTAGAGTC 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   264 AACCGGGGTCCTTCACCTCGGACGCAGCACCTACGACATCCTGGTCAGCACCGCTAC 205
                                                                                                                                                                                                                                                                                             1 (bases 1 to 603)
1. (Y., Zhu, H., Boyd, C.A., Gaudette, B., Gayle, A., Kingsbury, R., Phillips, K., Sasinowski, M. Wing, R.A. and Dean, R.A. A BAC End Sequencing Framework to Sequence the Magnaporthe grisea
                                                                                                                                                                                                  Magnaporthe grisea (anamorph: Pyricularia grisea)
Magnaporthe grisea
Eukaryota, Fungi; Ascomycota, Perizomycotina, Sordariomycetes,
Sordariomycetes incertae sedis; Magnaporthaceae; Magnaporthe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 12.5%; Score 82.8; DB 28; Length 603; Best Local Similarity 52.8%; Pred. No. 1.9e-08; Matches 227; Conservative 0; Mismatches 197; Indels 6;
                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Dean RA
Clemson University Genomics Institute
Clemson University
Ill Joydan Hall, Clemson Universiy, Clemson, SC 29634
Tel: 864 656 5737
Fax: 864 656 4293
Email: rdean@clemson.edu
Email: rdean@clemson.edu
Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   organism="Magnaporthe grisea"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                High quality sequence stop: 424.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /mol_type="genomic DNA"
/strain="70-15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         db_xref="taxon:148305"
                                                                                                                                                         AQ160513.1 GI:3557502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . .603
                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  104
                                                                                                                                                                                                                                                                                                                                                                                                Senome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         214
                                    AQ160513/c
LOCUS
DEFINITION
                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                            ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
```

```
/db_xref="vorus" | db_xref="vorus" | /db_xref="vorus" | /db_xref="vorus" | /db_xref="rectoral ats" | /done="mgxb0005C20f" | /tiseuc_type="protoplasts" | /lab host="sc_colidats" | /lab host="sc_colidat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AQ447125
mgxb0005C20f CUGI Rice Blast BAC Library Magnaporthe grisea genomic
Clone mgxb0005C20f, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ä
                                                                                                                                                                                                                                                                                                                                       567
204 AACCAGCCTCCATCGACGCACCAAGACCTTTCAGCAGTTCTGGTCGGTGCGCCGCAAC 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Magnaporthe grisea (anamorph: Pyricularia grisea)
Magnaporthe grisea
Magnaporthe grisea
Bukaryota; Fungil Ascomycota; Pezizomycotina; Sordariomycetes;
Sordariomycetes incertee sedis; Magnaporthaceae; Magnaporthe.

[bases 1 to 670]
Yu, Y., Zhu, H., Boyd, C.A., Gaudette, B., Gayle, A., Kingsbury, R.,
Phillips, K., Saainowski, M. Wing, R.A. and Dean, R.A.

A BAC End Sequencing Framework to Sequence the Magnaporthe grisea
                                                                                                                                                                                                                            85
                                                                                                                                                                                                                                                                                                                            144 AAGCGCCCAGCGCACCGTCACCTTTGCCAACCACGTCAACGCCTGGCGCAACGCCGGC
                                                                                                                      451 AAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGAGCGTGGGAAAACTTAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gapa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 670;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Dean RA
Clemson University Genomics Institute
Clemson University
Clemson University
In0 Jordan Hall, Clemson Universiy, Clemson, SC 29634
Tel: 864 656 5737
Fax: 864 656 4293
Email: rdean@clemson.edu
Seg primer: TAATACGACTCACTATAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12.4%; Score 82.2; DB 28; 54.6%; Pred. No. 2.6e-08; iive 0; Mismatches 168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Magnaporthe grisea"
/mol_type="genomic DNA"
/strain="70-15"
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 5
AQ361561/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         र्श
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              유 성
                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                         gource
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tel: 864 656 5737

Fax: 864 656 4293
Email: rdean@clemson.edu
Seq primer: GGAAACAGCTATGACCATG
Class: BAC ends
High quality sequence stop: 321.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Dean RA
Clemson University Genomics Institute
Clemson University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AQ361561.1 GI:4211400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AQ361561 720 bp DNA linear Gmgxb0004B19r CUGI Rice Blast BAC Library Magnaporthe Clone mgxb0004B19r, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Magnaporthe grisea (anamorph: Magnaporthe grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ĭ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Sordariomycetes incertae sedis; Magnaporthaceae; Magnaporthe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Clemson University
100 Jordan Hall, Clemson Universiy, Clemson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A---GGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGCAACTGGCGTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTATCAAAGTAGCGGAAGTGCTA 577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCGCAACGCCGGCCTCAACCTCGGCAACCAGTGGAACTACCAGATCCTGGCCGTCGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG---CTTACTGTAGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTGCGCCGCAACAAGCGCGCCAGCGGCACCGTCACCTTTGCCAACCACGTCAACGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACATTTAAACAATATTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTCGGGCGCCACCAACCGGGGGTCCTTCACCTCGGACGGCAGCACTTACGACATCCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GACGCGCAACCCGCTGATCGAGTACTACGTGGTGGAGAGCTTTGGCAGCTACAACCCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATCAACTACTCGGGCAGCTACAGCCCCCAGGGCAACTCATACCTGGCCGTCTACGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATAAACTACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTACCACAGCAGCGGCTCCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGAGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGCACCCGCTACAACCAGCCCTCCATCGACGGCACCAAGACCTTTCAGCAGTTCTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 End Sequencing Framework to Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ses 1 to 720)
Zhu,H., Boyd,C.A., Gaudette,B., Gayle,A., Kingsbury,R.,ps,K., Sasinowski,M, Wing,R.A. and Dean,R.A.
/tissue type="Protoplasts"
/lab host="E. coli DH108"
/clone_lib="CUGI Rice Blast BAC Library"
/clone_lib="CUGI Rice Blast BAC Library"
/note="Vector: pBACWICH, Site 1: HindIII; Site_2: HindIII;
/note="Vector: pBACWICH, Site 1: HindIII;
/note="Vector: pBACWICH, Site 1: HindIII; Site 2: HindIII;
/note="Vector: pBACWICH, Site 1: HindIII; Site 2: HindIII;
/note="Vector: pBACWICH, Site 1: HindIII
                                                                                                                                                                                                                                                                                                                  /mol_type="genomic DNA"
/strain="70-15"
                                                                                                                                                                                                                                                                                                                                                                         organism="Magnaporthe
                                                                                                                                                                                                                                                                                                                                                                                                                                 location/Qualifiers
                                                                                                                                                                                                                                                             clone="mgxb0004B19r"
                                                                                                                                                                                                                                                                                             xref="taxon:148305"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pyricularia grisea)
                                                                                                                                                                                                                                                                                                                                                                         grisea"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the Magnaporthe grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GSS 03-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 6
AQ160254/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           236;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   90
Clemson University Genomics Institute Clemson University.
100 Jordan Hall, Clemson University, C. Tel: 864 656 5737
Fax: 864 656 4293
Email: rdean@clemson.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Magnaporthe grisea (anamorph: Pyricularia grisea)
Magnaporthe grisea
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AQ160254 750 bp DNA linear (mgxb0003119r CUGI Rice Blast BAC Library Magnaporthe
                                                                                                                                                                                                                                                                                                                                Yu,Y., Zhu,H., Boyd,C.A., Gaudette,B., Gayle,A., Phillips,K., Sasinowski,M., Wing,R.A. and Dean,R.i A BAC End Sequencing Framework to Sequence the M.
                                                                                                                                                                                                                               Unpublished
Contact: Dean RA
                                                                                                                                                                                                                                                                                                         Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AQ160254.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AQ160254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   clone mgxb0003L19r,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sordariomycetes incertae sedis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGGCAACTGGCGTCCACCA----GGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACCCGCTGATCGAGTACTACGTGGTGGAGAGCTTTGGCAGCTACAACCCGTCGTCGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAGGAAAAAAAAGAGACTAACAACAACAACAAAAAA-----CAGCCGCGTCATCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAGGTAAAAAATTCAATGAAACACAAAACACCAACAAGTTGGTAACATGTCCATAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCAGCGGCTCCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCGGCCTCAACCTCGGCAACCAGTGGAACTACCAGATCCTGGCCGTCGAGGGCTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG---CTTACTGTAGAAGGCTATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGCAACAAGCGCGCCAGCGGCACCGTCACCTTTGCCAACCACGTCAACGCCTGGCGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGAGCGTGGGAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGGAGTGTTCGA 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCACCAACCGCGGGTCCTTCACCTCGGACGGCAGCATCCTACGACATCCTGGTCAGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACGAGACTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TACTCGGGCAGCTACAGCCCNCAGGGCAACTCATACCTGGCCGTCTACGGCTGGACGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGGTTGGACTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTAGCGGAAGTGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCTACAACCAGCCCTCCATCGACGGCACCAAGACCTTTCAGCAGTTCTGGTCGGTGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 750)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      order to facilitate genome wide analysis, a BAC library containing 9216 clones with an average insert size of the state of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:3557243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 82.2; DB 28
Pred. No. 2.6e-08;
0; Mismatches 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Magnaporthaceae;
                                                                                                                       Clemson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                       SC 29634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sordariomycetes;
                                                                                                                                                                                                                                                                                                                                       Magnaporthe grisea
                                                                                                                                                                                                                                                                                                                                                                                                          Kingsbury, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Magnaporthe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GSS 09-S
e grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-SEP-1998
isea genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   130
```

Seq primer: GGAAACAGCTATGACCATG

High quality sequence

stop: 344

```
/tissue_rype="Protoplasts"
/tissue_rype="Protoplasts"
/lab_host="E. coli DH10B"
/clon=lib="CGCI Rice Blatt BAC Library"
/note="Vector: pBAGWICH; Site 1: HindIII; Site 2: HindIII;
/note="Vector: pBAGWICH; Site 1: HindIII; Rice blast is one of the most devestating fungal diseases of rice world wide. It is a filamentous ascomycete with a haploid genome (n=7) of approximately 40 Mbp. Rice blast is an important model fungal pathogen for studying numerous aspects of the fungal-host interaction. In order to facilitate genome wide analysis, a BAC library containing 9216 clones with an average insert size of 130 kbp was constructed. This library represents greater than 25X genome coverage. High density colony filters are available upon request." I others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    208 TACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGGTTGGACTGTT 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACGAGACTCTT 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    325 gecaecarceceserectricaecresaresacaseaecaecraeaeareaecaee 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                265 CGCTACAACCAGCCCTCCATCGACGGCACCAAGACCTTTCAGCAGTTCTGGTCGGTGGGC 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               445 AGATCGAAACGCACGAGGCACGATTTCTGTCAGCAACCACTTTAGAGCGTGGGAAAAC 504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               205 GGCAACAAGGGGGCAGGGGGCACGGTCACCTTTGCCAACCACGTCAACGCCTGGCGCAAC 146
                                Yu,Y., Zhu,H., Boyd,C.A., Gaudette,B., Gayle,A., Kingsbury,R.,
Phillips,K., Sasinowski,M. Wing,R.A. and Dean,R.A.
A BAC End Sequencing Framework to Sequence the Magnaporthe grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   145 GCCGGCCTCAACCTCGCCAACCAGTGGAACTACCAGATCCTGGCCGTCGAGGCTTACCAC 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 500 AAAGGAAAAAAGAGACTAACAACAACAACAACAAAAA-----CAGCCGCGTCATCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            445 TACTCGGGCAGCTACAGCCCCCAGGGCAACTCATACCTGGCCGTCTACGGCTGGACGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               268 GACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGCAACTGGCGTCCACCA---GGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           385 AGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGGAGTGTTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               505 TTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG---CTTACTGTAGAAGGCTATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                148 AAAGGTAAAAATTCAATGAAACACAAACACACCAACAAGTTGGTAACATGTCCATAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            385 AACCCGCTGATCGAGTACGTGGTGGAGAGCTTTGGCAGCTACAACCCGTCGTCGGCC
                                                                                                                                                                                                    Contact: Dean RA
Clemson University Genomics Institute
Clemson University
100 Jordan Hall, Clemson University, Clemson, SC 29634
Tel: 864 656 5737
Fax: 864 656 4293
Fax: 864 656 4293
Fax: 864 primer: GGAAACAGCTATGACCATG
Class: BAC ends
High quality sequence start: 49
High quality sequence stop: 468.
Location/Qualiflers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 786;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 81.6; DB 28;
Pred. No. 3.6e-08;
0; Mismatches 189;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Magnaporthe grisea"
/mol_type="genomic DNA"
/strain="70-15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:148305"
/clone="mgxb0021M08r"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12.3%; 54.1%;
          (bases 1 to 786)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 236; Conservative
                                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   325 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                       JOURNAL
                                       AUTHORS
          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                             /tissue types "Proplasts"
//lab host="E. coli DH108"
//lab host="E. coli DH108"
//clon=lib="Cud1 Rice Blast BAC Library"
//note="Vector: pBAGWICH; Site 1: HindIII; Site 2: HindIII;
Rice blast is one of the most devestating fungal diseases
of rice world wide. It is a filamentous asconvecte with
a haploid genome of the filamentous pacconvecte with
a haploid genome model fungal pathogen for studying
numerous aspects of the fungal-host interaction. In
order to facilitate genome wide analysis, a BAC library
containing 9216 clones with an average insert size of 130
kbp was constructed. This library represents greater
than 25X genome coverage. High density colony filters
are available upon request." 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                786 bp DNA linear GSS 08-JAN-1999 mgxb0021M08r CUGI Rice Blast BAC Library Magnaporthe grisea genomic clone mgxb0021M08r, genomic survey sequence. AQ332548 AQ325248. AQ325248.1 GI:4117100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         148 AAAGGTAAAAATTCAATGAAACACAAAACACACAACAAGATGGTAACATGTCCATAAAC 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGGTTGGACTGTT 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                210 CGCTACAACCAGCCCTCCATCGACGCACCAAGACCTTTCAGCAGTTCTGGTCGGTGCGC 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 445 AGATCGAAACGCACGAGTGCCACGATTTCTGTCAGCAACCACTTTAGAGCGTGGGAAAAC 504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 390 TACTCGGGCAGCTACAGCCCNCAGGGCAACTCATACCTGGCCGTCTACGGCTGGACGCGC 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGCAACTGGCGTCCACCA---GGA 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     330 AACCCGCTGATCGAGTACTACGTGGTGGAGAGCTTTGGCAGCTACAACCCGTCGTCGGCC 271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACGAGACTCTT 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     270 GCCACCAACCGCGGGTCCTTCACCTCGGACGCACCTACGACATCCTGGTCAGCACC 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        505 TTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG---CTTACTGTAGAAGGCTATCAA 561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCGGCCTCAACCTCGGCAACCAGTGGAACTACCAGATCCTGGCCGTCGAGGGCTACCAC 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Magnaporthe grisea (anamorph: Pyricularia grisea)
Magnaporthe grisea
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAGGAAAAAAAAGAGACTAACAACAACAACAAAAAA-----CAGCCGCGTCATCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      385 AGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGGAGTGTTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 150 cécaacaagécecedecedededes contraccaacea de contrace de contrac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sordariomycetes incertae sedis; Magnaporthaceae; Magnaporthe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 750;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 82.2; DB 28;
Pred. No. 2.6e-08;
0; Mismatches 189;
                                                                          grisea"
                                                                   /organism="Magnaporthe | /mol_type="genomic DNA" | strain="70-15"
                                                                                                                                                                       _xref="taxon:148305"
                                                                                                                                                                                                              /clone="mgxb0003L19r"
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            562 AGTAGCGGAAGTGCTA 577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCAGCGGCTCCGCCA 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tch 12.4%;
al Similarity 54.1%;
236; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AQ325248/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             윱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
```

ë,

5

562

AGTAGCGGAAGTGCTA 577

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 8
AQ399120/c
LOCUS
밁
                                                                                  밁
                                                                                                                       ঠ
                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                       Query Match 12.3%;
Best Local Similarity 52.8%;
                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                          274
                                                                                    385
325
                                                                                                                              214
                                                                                                                                                                           445
                                                                                                                                                                                                                       154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                583 bp DNA linear GSS 06-MAR-1999 mgxb0001B24f CUGI Rice Blast BAC Library Magnaporthe grisea genomic clone mgxb0001B24f, genomic survey sequence.
AQ399120 1 GI:4370147
GSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tel: 864 656 5737

Fax: 864 656 4293

Email: rdean@clemson.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Magnaporthe grisea (anamorph: Pyricularia grisea)
Magnaporthe grisea
Bukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes;
Sordariomycetes incertae sedis; Magnaporthaceae; Magnaporthe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seq primer: TAATACGACTCACTATAGGGCClass: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Clemson University Genomics Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished
Contact: Dea
CTGATCGAGTACTACGTGGTGGAGAGCTTTGGCAGCTACAACCCGTCGTCGGGCGCCACC 266
                                                                                                                            GCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGGTTGGACTGTTGACCCT
                                                                                                                                                                             AAGAAAAAAAGAGAGACTAACATCAACAACAACAAAAAACAGCCGCGTCATCAACTACTCG 386
                                                                                                                                                                                                                       AAAAAATTCAATGAAACACAAACACCAACAAGTTGGTAACATGTCCATAAACTACGGA
                                     CTTGTCGAATATTATTGTCGACAGTTGGGGCAACTGGCGTCCACCA---GGAGCAACG 330
                                                                                    GGCAGCTACAGCCCACAGGGCAACTCATACCTGGCCGTCTACGGCTGGACGCGCAACCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    emson University
O Jordan Hall, C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCAGCGGCTCCGCCA 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 583)
Y., Zhu, H., Boyd, C.A., Gaudette, B., Gayle, A., Kingsbury, R., 111ps, K., Sasinowski, M., Wing, R.A. and Dean, R.A.
                                                                                                                                                                                                                                                                                                                                                                                104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         quality sequence stop: 411.
Location/Qualifiers
                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                         /clone lib="CUGI Rice Blast BAC Library"
/clone lib="CUGI Rice Blast BAC Library"
/note="Vector: pBACWICH; Site 1: HindIII; Nite 2: HindIII;
Rice blast is one of the most devestating fungal diseases
of rice world wide. It is a filamentous ascomycete with
a haploid genome (n=7) of approximately 40 Mbp. Rice
blast is an important model fungal pathogen for studying
numerous aspects of the fungal-host interaction. In
order to facilitate genome wide analysis, a BAC library
containing 9216 clones with an average insert size of 130
kbp was constructed. This library represents greater
than 25X genome coverage. High density colony filters
are available upon request."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       End Sequencing Framework to Sequence the Magnaporthe grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Dean RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tissue_type="Protoplasts"
/lab_host="E. coli DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /strain="70-15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             organism="Magnaporthe grisea"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        lone="mgxb0001B24f"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _xref="taxon:148305"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _type="genomic DNA'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Clemson Universiy, Clemson,
                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                       Score 81.4; DB 28; Pred. No. 3.9e-08;
                                                                                                                                                                                                                                                                                                            Length 583;
                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SC 29634
                                                                                                                                                                                                                                                                    ω,
                                                                                                                                                                                                                                                                  Gaps
                                                                                      326
                                                                                                                                 273
```

```
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AQ396475/c
                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    561 bp DNA linear Gmgxb0010M14f CUGI Rice Blast BAC Library Magnaporthe clone mgxb0010M14f, genomic survey sequence.
AQ396475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 561)
Yu,Y., Zhu,H., Boyd,C.A., Gaudette,B., Gayle,A., Kingsbury,R.,
Phillips,K., Sasinowski,M., Wing,R.A. and Dean,R.A.
A BAC End Sequencing Framework to Sequence the Magnaporthe grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Magnaporthe grisea (anamorph: Pyricularia grisea)
Magnaporthe grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tel: 864 656 5737
Fax: 864 656 4293
Email: rdean@clemson.edu
Seq primer: TANTACGACTCACTATAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Clemson University Genomics Institute
Clemson University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished
Contact: De
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Sordariomycetes incertae sedis; Magnaporthaceae; Magnaporthe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AQ396475.1
GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                High quality sequence start: 50 High quality sequence stop: 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100 Jordan Hall,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACGAGACTCTTAGAGTC 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCAACCTCGGCAACCAGT 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGAATATGGGGAAAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGAGCGTGGGAAAACTTAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGGAGTGTTCGAAGATCG 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGCGCGCCAGCGGCACCGTCACCTTTGCCAACCACGTCAACGCCTGGCGCAACGCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACCGCGGGTCCTTCACCTCGGACGGCAGCACCTACGACATCCTGGTCAGCACCCGCTAC
                      99
/tissue_type="Protoplasts"
/lab host="E. coli DH10B"
/clome lib="CUGI Rice Blast BAC Library"
/clome lib="CUGI Rice Blast BAC Library"
/note="Vector: pBACWICH; Site 1: HindIII; Site 2: HindIII;
/note="Vector: pBACWICH; Site 1: HindIII;
/note="Vector: pBACWICH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dean RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /mol_type="genomic DNA'
/strain="70-15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Magnaporthe grisea"
/mol_type="qenomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:148305"
/clone="mgxb0010M14f"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:4367502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Clemson University, Clemson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ဂ္ဂ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GSS 06-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             206
```

Query Match 11.6%; Best Local Similarity 53.7%; Matches 204; Conservative

0

Score 76.6; DB 28; Pred. No. 4.7e-07; 0; Mismatches 170;

Indels Length 561;

6,

Gaps

337

260

Gaps

ë,

277

437

497

97

SC 29634

g

윱 ò g ò

δ

ò g ð g ઠ

```
numerous aspects of the fungal-host interaction. In ocder to facilitate genome wide analysis, a BAC library containing 9216 clones with an average insert size of 130 kbp was constructed. This library represents greater than 25% genome coverage. High density colony filters are available upon request."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AQ398756 11near GSS 06-MAR-1999 agxb0005L16f CUGI Rice Blast BAC Library Magnaporthe grisea genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        261 GACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGCAACTGGCGTCCACC 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            321 A---GGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACGA 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            276 grossicica contractor de de contra de cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        216 CAGCACCCGCTACAACCAGCCCTCCATCGACGCCACGAGACCTTTCAGCAGTTCTGGTC 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    396 CATCAACTACTCGGGCAGCTACAGCCCCCAGGGCAACTCATACCTGGCCGTCTACGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 336 GACGCGCAACCCGCTGATCGAGTACTACGTGGAGAGCTTTGGCAGCTACAACCCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    378 GACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            438 TGTTCGAAGGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGAGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                201 CATAAACTACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGGTTG
                                                                                                                                                                                                                                                                                                            11.3%; Score 74.6; DB 28; Length 753; 55.1%; Pred. No. 1.4e-06; ive 0; Mismatches 134; Indels 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Magnaporthe grisea (anamorph: Pyricularia grisea)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Dean RA
Clemson University Genomics Institute
Clemson University
100 Jordan Hall, Clemson Universiy, Clemson,
Tel: 864 556 5737
Email: rdean@clemson.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clone mgxb0005L16f, genomic survey sequence. AQ398756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .418
/organam="Magnaporthe grieea"
/mol type="genomic DNA"
/strain="70-15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Seg primer: TAATACGACTCACTATAGGG
Class: BAC ends
High quality sequence stop: 334.
Location/Qualiflers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:148305"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="mgxb0005L16f"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AQ398756.1 GI:4369783
                                                                                                                                                                                                                                                                                                                                                                                   Matches 168; Conservative
                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                498 GGAAA 502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCACA 92
                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96
                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 11
AQ398756/c
                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ሯ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AQ448084 153 bp DNA linear GSS 08-APR-1999 mgxb0016B21f CUGI Rice Blast BAC Library Magnaporthe grisea genomic Clone mgxb0016B21f, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /issue "Type="Procoplasts"
/lab host="B. coll DH10B"
/clone_lib="CQIZ Rice Blast BAC Library"
/note="Vector: BACWICH; Site 1: HindIII; Site 2: HindIII;
Rice blast is one of the most devestating fungal diseases
of rice world wide. It is a filamentous ascompcete with
a haploid genome (n=7) of approximately 40 Mbp. Rice
blast is an important model fungal pathogen for studying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            199
                                                                                                                                                                               258
                                                                                                                                                                                                                                                                                                                                                          ||||||
TGGACGCGCAACCCGCTGATCGAGTACTACGTGGAGAGCTTTGGCAGCTACAACCCG 319
                                                                                                                                                                                                                                           --CATCAACTACTCGGGCAGCTACAGCCCCCAGGGCAACTCATACCTGGCCGTCTACGGC 379
                                                                                                                                                                                                                                                                                                               TGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGCAACTGGCGTCCA 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                319 CCA---GGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTAC 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    318 TCGTCGGGCCCCACCAACCGCGGGTCCTTCACCTCGGACGCAGCACCACCTACGACATCCTG 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            436 AGTGTTCGAAGATCGAAACGCACGAGGGCACGATTTCTGTCAGCAACCACTTTAGAGCG 495
                                                                                                    198 TCGGTGCGCCAACAAGCGCGCCAGCGGCACCGTCACCTTTGCCAACCACGTCAACGCC 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 753)
Y.Y., Zhu, H., Boyd, C.A., Gaudette, B., Gayle, A., Kingsbury, R.,
Phillips, K., Sasinowski, M. Wing, R.A. and Dean, R.A.
A BAC End Sequencing Framework to Sequence the Magnaporthe grisea
                                       TTATTCCGTAAAAGGTAAAAATTCAATGAAACACAAAACACACCAACAAGTTGGTAACATG
                                                                                                                                                                       TCCATAAACTACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGGATTGCCACATTTAAACAATATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     258 grcagcacccccracaaccacccriccarcaacaccaagaccrircagaacricrica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Magnaporthe grisea (anamorph: Pyricularia grisea)
Magnaporthe grisea
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Sordariomycetes sordariomycetes incertae sedis; Magnaporthaceae; Magnaporthe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Dean RA
Clembon University Genomics Institute
Clembon University
100 Jordan Hall, Clemson University, Clemson, SC 29634
Tel: 864 656 5737
Exar: 864 656 4293
Email: rdean@clemson.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Magnaporthe grisea"
/mol type="genomic DNA"
/strain="70-15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Seq primer: TAATACGACTCACTATAGGG
Class: BAC ends
High quality sequence stop: 401.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            db_xref="taxon:148305"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             clone="mgxb0016B21f"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 138 redecedacecedecricas 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGGAAAACTTAGGGATGAA 515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AQ448084.1 GI:4577221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished
                                                                                                       495
                                                                                                                                                                           199
                                                                                                                                                                                                                                           436
                                                                                                                                                                                                                                                                                                               259
                                                                                                                                                                                                                                                                                                                                                                                378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AQ448084/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .
B
```

/tissue_type="Protoplasts" /lab_host="E. coli DH10B"

```
Anderson,O.D., Chao,S., Choi,D.W., Close,T.J., Fenton,R.D., Han, P.S., Hsia,C.C., Kang,Y., Lazo,G.R., Miller,R., Rausch,C.J., Seaton,C.L. and Tong,J.C.
The structure and function of the expressed portion of the wheat genomes - Vernalized crown cDNA library
Contact: Olin Anderson
US Department of Agriculture, Agriculture Research Service,
West Area, Western Regional Research Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BQ165950 520 bp mRNA linear EST 25-APR-2002
WHE0821-0824_F22_F22ZT Wheat vernalized crown cDNA library Triticum
aestivum cDNA clone WHE0821-0824_F22_F22, mRNA sequence
                                                                                                                                                                                                                                                                                                                                             Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, Pooldeae, Triticeae, Triticum.

1 (bases 1 to 520)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCG---CTTACTGTAGAAGGCT 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGTTGACCCTCTTGTCGAATATTATTGTCGACAGTTGGGGGCAACTGGCGTCCACCA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAAAACCTCNGGGCAGCTACAGCCCCCAGGGCAACTCATACCTGGCCGTCTACGGCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAAACTACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGGTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAACGCCGGCCTCAACCTCGGCAACCAGTGGAACTACCAGATCCTGGCCGTCGAGGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCACCCGCTACAACCAGCCCTCCATCGACGGCACCAAGACCTTTCAGCAGTTCTGGTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGGAGTG 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -- GGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCGCAACCCGCTGATCGAGTACTACGTGGTGGAGAGCTTTGGCAGCTACAACCCGTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGAGCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGGGCGCCACCAACCGCGGGTCCTTCACCTCGGACGCCAGCACCTACGACATCCTGGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCGCCGCAACAAGCGCGCCAGCGGCACCGTCACCTTTGCCAACCACGTCAACGCCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     //tlssue_ryr.
//lab_host="B. coli DH10B"
//lab_host="B. coli DH10B"
//clone lib="CUGI Rice Blast BAC Library"
//clone lib="CUGI Rice Blast BAC Library"
//note="Vector: pBACWICH; Site 1: HindIII; Site 2: HindIII;
//note="Vector: pBACWICH; Site 2: HindIII; Site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                              of the wheat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                               Pacific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97
                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 13
BQ471960
                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                  ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          369
Hordeum vulgare subsp. vulgare
Hordeum vulgare subsp. vulgare
Eukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooldeae; Triticeae; Hordeum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                800 Buchanan Street, Albany, CA 94710, USA

Tel: 5105595773

Fax: 510559818

Email: oandersn@pw.usda.gov

This EST was generated by sequencing from the 3' end of the clone.

Sequences have been trimmed to remove vector sequence and low quality sequence with phred score less than 20.

Seq primer: T7 primer.
                                                                                                                                                                                                                                                                                                                                             BQ471960 561 bp · HV04A02r HV Hordeum vulgare subsp.
                                                                                                                                                                                                                                                                                                                 5-PRIME,
                                                                                                                                                                                                                                      BQ471960.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAAGGCTATCAAAGTAGCGGAAGTGCTAATGTATATAGCAATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGAGGGTTACCAGTCTTCTGGCAGCTCGGACATCTATGTGCAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTACTGGTCTGTCCGCACGCAGAAGCGCGTCGGAGGCAGCGTCAACATGCAAAACCACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATCTACGAGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAACCCCAGCAGCGGATCCCAGCGCAAGGGCAGCTTCACGACTGACGGCGGTACCTACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGTCC---ACCAGGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGA 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTATGGTTGGACTGTTGACCCTCTTGTCGAATATTATATTGTCGACAGTTGGGGCAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAACGCCTGGGCTCGTTACGGCATGAACTTGGGCCAGCACTACTACCAGATTGTCGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAGAGCGTGGGAAAACTTAGGGATGAATATGGGGAAAATGTATGAAGTCGCGCTTACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATATTGGAGTGTTCGAAGATCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGTTTCCACCTCCACCCGTACCAACCAGCCCTCCATCGATGGAACAAGGACCTTTCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTACGGTTGGACCCGCAACCCGCTTGTGGAGTACTACGTGATCGAGTCTTACGGCACCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      D)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /Clone_lib="Wheat vernalized crown cDNA library";
/note="Vector: Lambda Uni-ZAP XR, excised phagemid;
Site_1: EcoRI. Site_2: XhoI, Seeds were germinated and
grown at 4 C for 5 weeks. The tissue, total RNA, and
poly(A) RNA were prepared, a cDNA library was made, and
the cDNA clones were in vivo excised to give pBluescript
phagemids in the TJ Close lab (Choi, Close, Fenton) at
the University of California, Riverside. Plasmid DNA
preparations and DNA sequencing were performed in the OD
Anderson lab (all other authors)."
                                                                                                                                                                                                                                                                                                                 mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /mol_type="mRNA"
/cultivar="Chinese Spring"
/db_xref="taxon:4565"
/clone="wHE0821-0824 F22_F22"
/tissue_type="Crown tissue of seedling"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       dev_stage="Five-week old seedling"
/lab_host="E. coli SOLR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        organism="Triticum aestivum'
                                                                                                                                                                                                                                      GI:21279742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10.5%;
                                                                                                                                                                                                                                                                                                         sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 69.8; DB 13
Pred. No. 1.6e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches 162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 13;
                                                                                                                                                                                                                                                                                                                                                 vulgare
                                                                                                                                                                                                                                                                                                                                                     cDNA clone HV04A02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       176
```

ω •

Gaps

488

281

221

428 341

401

461

밁 ঠ ঠ 밁 S 밁

396

BASE COUNT

61

than 25X genome coverage. Hi are available upon request." 104 c 161 g 91 t

Query Match Best Local Similarity Matches 203; Conserv

Conservative

0

Mismatches 172; .4e-06; B 28;

11.2%;

Score 74.4; Pred. No. 1.

밁

JOURNAL COMMENT

Unpublished

TITLE

REFERENCE

AUTHORS

RESULT 12 BQ165950/c

DEFINITION POCUS 밁 S 문 र्

96

500 156 440 216 380 276 322 336 263

á

557

ATCAMAGTAGCGGAAGTGCTA 577

36

ACCACAGCAGCGGCTCCGCCA 16

ACCESSION VERSION

BQ165950 BQ165950.1 GI:20308866

KEYWORDS

ORGANISM

Triticum aestivum

EST 30-MAY-2002

Triticum aestivum (bread wheat)

```
Cordonnier-Pratt, M.-M., Wentzel, V., Suzuki, Y., Sugano, S., Klein, R.B., Liang, C., Sun, F., Sullivan, R., Shah, M., Salzman, R., Chua Tan, N., Gonzalez, M., Lane, S., Miller, V., Nanda, P., Olaseinde, O., Eastman, A. and Pratt, L.H.
An EST datebase from Sorghum: 1-aminocyclopropane-1-carboxylic acid URC)-treated seedlings
                                                                                                                                                                                                                                                                                                                                                Library constructed by Dr. Yutaka Suzuki and Dr. Sumio Sugano in the Human Genome Center, University of Tokyo Institute of Medical Science; plant material and RNA prepared at Texas A & M University, of sequencing done in the Laboratory for Genomics and Bioinformatics, University of Georgia. Sequence ends have been trimmed to exclude vector and regions below Phred quality 16. Three-prime sequences are presented as their reverse complement and have been trimmed to exclude exclude polyA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               394 CAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGGAGTGTTCGAAGATCGAAA 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            136 cdarccadeddarccarcadacaeceddarcreachteagaechdaaaaaaarcregeecre 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        76 GCCCCCTCCATTGAGGGTAACAAGCCCTTTCAGCAGTTTTGGTCTGTTCGACGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          334 AAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACGAGACTCTTAGAGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 454 CGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGAGCGTGGGAAAACTTAGGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  196 ACCCTTGGTAACCACAACTATCAGATCCTTGCTGTTGAGGGCTACTACAGCTCTGGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16 AAGGGTGAGGTCACTGTTGACGGATCTTTACGACATTTACGTCAGCACCCGTCTCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       514 AATATGGGGAAAATGTATGAAGTCGCGCTTACTGTAGAAGGCTATCAAAGTAGCGGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                    Laboratory for Genomics and Bioinformatics
The University of Georgia, Department of Plant Biology
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA
Tal: 706 542 1860
Fax: 706 583 0210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9.5%; Score 63.2; DB 14; Length 473; 53.7%; Pred. No. 0.0005; ive 0; Mismatches 113; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seq primer: Sug3 (CGACCTGCAGCTCGAGCACA)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'organism="Sorghum bicolor"
                                                                                                                                                                              Other ESTs: ETH1 48 B06.g1 A002 Contact: Cordonier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    112 g
                                                                                                                                                                                                                                                                                                                                Email: mmpratt@uga.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       126 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 53.7
Matches 131; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             574 GCTA 577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        256 GCCA 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POLYA=Yes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNT
      REFERENCE
AUTHORS
                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE CC
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 (bases 1 to 561)
Zhang,H., Potokina,E., Michalek,W., Weschke,W., Stein,N. and Graner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 473 bp mRNA linear EST 04-JUN-2003 ETH1 48 B06.bl A002 Ethylene-treated seedlings Sorghum bicolor cDNA CLONE ETH1 48 B06 A002 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       320 cearcaactacceccearcrirccacciccacciaacciriaccirccciciacciria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                260 GGACTGTTGACCCTCTTGTCGAATATTATTATTGTCGACAGTTGGGGCAACTGGCGTCCAC 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           380 GGACCCGCAACCCGCTTGTGGAGTACTACGTGATCGAGTCTTACGGCACCTACAACCCCA 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      320 CA---GGAGCAACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACG 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukāryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopaida; Poales; Poaceae; PACCAD
clade; Panicoideae; Andropogoneae; Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 440 GCAGCGGATCCCAGCGAAGGCAGCTTCACGACTGACGGCGGTACCTACGACGTTTCCA 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    500 ccrccacccarccaaccacccrccarcaaraaaacaagaccrrrcacaaracaacas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCATAAACTACGGAGCCAACTTCCAACCAAATGGTAATGCGTATTTATGCGTCTATGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            377 AGACTCTTAGAGTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGG
                                                        Marley ESTs from germinating seeds
Unpublished
Contact: Stein Nils
Contact: Stein Nils
Molecular Markers Group, Department Genbank
Institute of Plant Genetics and Crop Plant Research (IPK)
Corrensstr. 3 06466, Gatersleben, Germany
Tel: 039482-5522
Fax: 039482-5525
Email: stein@ipk-gatersleben.de
Insert Length: 561 Std Error: 0.00
Plate: 4 row: A column: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tch 10.0%; Score 66.2; DB 13; Length 561; al Similarity 57.7%; Pred. No. 0.00011; 138; Conservative 0; Mismatches 98; Indels 3
                                                                                                                                                                                                                                                                                                                                                                       organism="Hordeum vulgare subsp. vulgare"
                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="taxon:112509"
/clone="HV04A02"
/clssue_type="germinating seeds"
/dev stage="germinating seeds (48-96 h)"
/lab_host="XL10-Gold"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            112 t
                                                                                                                                                                                                                                                                                                                          location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         148 g
                                                                                                                                                                                                                                                                                                                                                                                           /mol_type="mRNA"
/cultivar="barke"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sorghum bicolor (sorghum)
Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CD464005:1 GI:31385273
                                                                                                                                                                                                                                                                                                        Seg primer: Ml3rev.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            184 c
                                                                                                                                                                                                                                                                                                                                              . . 561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local
Matches 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
KEYWORDS
REFERENCE
AUTHORS
                                                             TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 14
CD464005
                                                                                                                                                                                                                                                                                                                              FEATURES
```

a

ò

셤

ò

g

ઠે

ò

ö

75

513

```
RESULT 15
BQ664593/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
                       S
                                                                   밁
                                                                                                           S
                                                                                                                                                                                                ঠ
                                                                                                                                                        밁
                                                                                                                                                                                                                                                   유
                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                            Matches 167;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bource
                            448
                                                                        363
                                                                                                                388
                                                                                                                                                             423
                                                                                                                                                                                                    328 ACGCCTAAGGGGACCATCACTGTTGATGGAGGAACATATGATATCTACGAGACTCTTAGA 387
                                                                                                                                                                                                                                                      483
                                                                                                                                                                                                                                                                                  271 CCTCTTGTCGAATATTTATATTTGTCGACAGTTGGGGGCAACTGGCGTCC---ACCAGGAGCA 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HV04A02u HV Hordeum vulgare subsp.
3-PRIME, mRNA sequence.
BQ664593
BQ664593.1 GI:21806275
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: stein@ipk-gatersleben.de
Insert Length: 483 Std Error:
Plate: 4 row: A column: 2
Seg primer: Ml3uni.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Molecular Markers Group, Department Genbank Institute of Plant Genetics and Crop Plant Research (IPK) Corrensetr. 3, 06466, Gatersleben, Germany Tel: 039482-5522 Fax: 039482-5595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hordeum vulgare subsp. vulgare
Hordeum vulgare subsp. vulgare
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooldeae; Triticeae; Hordeum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Stein Nils
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Barley ESTs from germinating seeds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zhang, H., Potokina, E., Michalek, W., Weschke, W., Stein, N. and Graner
TCGAAACGCACGAGTGGCACGATTTCTGTCAGCAACCACTTTAGAGCGTGGGAAAACTTA 507
                                                                                                              GTCAATCAACCCTCCATTAAGGGGATTGCCACATTTAAACAATATTGGAGTGTTCGAAGA 447
                                                                                                                                                             CAGCGCAAGGGCAGCTTCACGACTGACGGCGGTACCTACGACGTTTCCACCTCCACCCGT
                                                                                                                                                                                                                                                   CCGCTTGTGGAGTACTACGTGATCGAGTCTTACGGCACCTACAACCCCAGCAGCAGCGGATCC
                                                                        ACCAACCAGCCTCCATCGATGGAACAAGGACCTTTCAGCAGTACTGGTCTGTCCGCACG 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 483)
                                                                                                                                                                                                                                                                                                                                                                                                                                                           102
                                                                                                                                                                                                                                                                                                                                          9.1%;
ilarity 51.2%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                              /clome lib="HV"
//clome lib="HV"
//note="Vector: pBluescript SK+; Site 1: EcoRI (5'-end of /note="Vector: pBluescript SK+; Site 1: EcoRI (5'-end of /note="Vector: paper at room temperature. Due to a cloning artefact caused by the kit, in most cases the EcoRI site is NOT present, as well as the EcoRIadapter used for cloning. To excise the insert, restriction sites upstream EcoRI should be used (e.g. BamHI, Sall, PStl).
WOTE: Also due to the cloning system used Blue/white selection for recombinate is not 100% reliable.Average insert size is 1 kb"
130 c 140 g 111 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /tissue_type="germinating seeds"
/dev_stage="germinating seeds (48-96 h)"
/lab_host="XL10-Gold"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /mol_type="mRNA"
/cultivar="barke"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            organism="Hordeum vulgare subsp. vulgare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              db_xref="taxon:112509"
clone="HV04A02"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             db_xref="GABI:148272"
                                                                                                                                                                                                                                                                                                                                          Score 60.4; DB 13;
Pred. No. 0.0021;
0; Mismatches 156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                       DB 13; Length 483;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA linear EST 15-JUL-2002 vulgare cDNA clone HV04A02
                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                               ω
--
                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                               364
                                                                                                                                                                                                                                                      424
```